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ANNUAL REPORTS OF THE DAIRYMEN'S ASSOCIATIONS OF THE PROVINCE OF ONTARIO 1921 AND 1922

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Ontario Department of Agriculture

ANNUAL REPORTS

OF THE

DAIRYMEN'S ASSOCIATIONS

OF THE

PROVINCE OF ONTARIO

1921 and 1922

PRINTED BY ORDER OF
THE LEGISLATIVE ASSEMBLY OF ONTARIO

TORONTO
Printed by CLARKSON W. JAMES, Printer to the King's Most Excellent Majesty
1923

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PRODUCED BY
The
United Press
LIMITED
TORONTO
CANADA

To His Honour HENRY COCKSHUTT,
Lieutenant-Governor of the Province of Ontario.

MAY IT PLEASE YOUR HONOUR:

I herewith present for the consideration of Your Honour the Annual Reports of the Dairymen's Associations for 1921 and 1922.

Respectfully yours,

MANNING W. DOHERTY,
Minister of Agriculture.

Toronto, 1923.

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Dairymen's Associations of Ontario

INTRODUCTION TO REPORT.

The non-appearance of Report of the Annual Conventions of the Dairymen's Associations for Eastern and Western Ontario, held in January, 1921, and covering the activities of the year 1920, soon after the Conventions were held, was due to the difficulty in getting printing done with dispatch. Much publicity was given to the proceedings by the press at the time the conventions were held. It is thought well, however, at this time, to present in a combined Report certain portions of the proceedings of the annual gatherings covering the work of the Associations and the activities of the field staff of the Dairy Branch of the Provincial Department of Agriculture for the years 1921 and 1922. The portions printed will be of value as a permanent record.

DAIRY STATISTICS FOR THE PROVINCE OF ONTARIO FOR THE YEARS 1920, 1921 AND 1922.

		No. of Factories	Pounds	Value
Cheese	1920	886	92,847,769	$24,615,290
	1921	869	103,432,696	18,676,380
	1922	845	92,709,285	15,037,284
Butter	1920	195	37,148,898	21,245,664
	1921	211	43,471,532	16,680,247
	1922	212	52,729,166	18,547,954
Condensed Milk, Powdered Milk, Casein.	1920	.....	.....	14,000,000
	1921	.....	.....	8,500,000
	1922	.....	.....	5,500,000
Disposed of by Factories, Creameries, Condenseries and Milk Powder Plants in the form of Ice Cream, Milk, Buttermilk, Cream, Whey, Soft Cheese, etc.	1920	.....	.....	11,000,000
	1921	.....	.....	5,000,000
	1922	.....	.....	7,000,000
Farm Dairy Butter, Milk used on farms, Town and City Milk Supply, Ice Cream, etc.	1920	.....	.....	35,000,000
	1921	.....	.....	25,000,000
	1922	.....	.....	24,000,000
Total value	1920	.....	.....	$105,860,954
	1921	.....	.....	73,856,527
	1922	.....	.....	70,085,238

DEPARTMENTAL SERVICES.

The Provincial Department of Agriculture maintains two dairy schools, one at Guelph and one at Kingston, a grading station in the Municipal Abattoir, Toronto, and a staff of instructors and inspectors, besides furnishing literature along dairy lines. The staff of field instructors and inspectors includes the following:

(1) 33 cheese factory instructors who go from factory to factory throughout the manufacturing season, from April 1st to November 30th, giving instruction

in manufacturing methods with a view to producing uniform high quality goods. In addition to acting as instructors, for the past two years they have done the testing of the milk under The Dairy Standards Act for over 90 per cent. of the cheese factories.

(2) 6 creamery instructors.

(3) 4 men who devote their time to checking up tests made in creameries, cream buying stations, and cheese factories in which Government employees do not do the testing, milk powder factories, and condenseries.

(4) A butter grading staff of five men.

In addition to the above, bacteriologists and chemists at the Agricultural College and Queen's University are available to assist in experimental and investigational work.

The literature available embraces the following:

Bulletin No. 266—"Cheese and Butter Making."
Bulletin No. 253—"Dairy Cattle."
Circular No. 19—"The Babcock Test."
Circular No. 20—"Cool, Sweet Milk Makes Most and Best Cheese."
Circular No. 21—"Care of Cream on the Farm."
Circular No. 22—"Why should the Milk of the Individual Cow be Weighed and Tested, and Records Kept of the Results?"
Circular No. 26—"Ice on the Farm."

The Provincial Government also gives financial aid to the Dairymen's Associations of Eastern and Western Ontario, and the Ontario Milk and Cream Producers' Association.

All this service, except a charge of 50 cents per patron for the season for testing milk in the cheese factories, is free to the producers and manufacturers.

It would appear that a great many producers do not realize that they have a responsibility in producing first-class raw material, both milk and cream, if the service available is to be made effective.

There are in Ontario a great number of first-class cheese factories and creameries, properly equipped and in charge of competent makers; while, on the other hand, there are a number of small, poorly equipped manufactories which have not the volume of business to secure or retain first-class men to take charge of the plants.

The great need of Ontario Dairying at the present time is the establishment of manufacturing plants upon a basis which will ensure a sufficient volume of business in well equipped factories and creameries to make it possible to carry on along lines which will make for quality and permanency. We cannot expect to be successful in competition with other countries unless the producers generally furnish high quality raw material. There is a great need also for more efficient marketing methods.

The purpose at this time is simply to point out the situation and need in the hope that those most directly concerned, the producers of milk and cream, will take the necessary action to establish the industry upon a business-like basis. The Government can give valuable assistance, and has a grave responsibility, but there must be co-operation and a deep sense of responsibility on the part of the producers and manufacturers if the industry, which means so much in Ontario agriculture, is to be developed as its possibilities and importance warrant.

GEORGE A. PUTNAM,
Director of Dairying.

ONTARIO BUTTER-GRADING STATION

At the urgent request of the dealers and manufacturers of butter, and after a season of investigational work as to the needs of the butter industry, the Government opened a Butter Grading Station at the Municipal Abattoir, Tecumseth Street, Toronto, on May 1st, 1917.

Owing to the very large home market, through which a very large percentage of the Ontario butter was marketed, it was felt that the sample-box system was the system most suitable to our conditions.

Creameries entering for grading were asked to forward by express or refrigerator car, to the grading station, a fourteen-pound box of each churning to be graded.

The samples, after being thoroughly cooled, so as to be in the best condition, were graded, and the report of quality, or score card, promptly mailed to the creamery.

A special system of marking the boxes was adopted, using serial numbers for the creameries. The stamping outfit was furnished by the Grading Station at cost. All adopted the same system, showing the serial number of the creamery, the date of manufacture, and churning number. Certificates of the grade and quality of the butter are given for each individual churning on request. If the butter is sold on grade, the boxes must have the same mark as the fourteen-pound sample representing the churning.

Scale of Points used in Scoring: Flavour, 45; texture, 15; incorporation of moisture, 10; colour, 10; salt, 10; finish, 10. Total score, 100.

STANDARDS OF GRADES BY POINTS.

	Special	No. 1	No. 2	No. 3
Flavour	41	39	37	under 37
Total of	94	92	87	under 87

In 1917, there were twenty-six creameries entered for grading. Nearly all were making butter of a very loose open type of texture, with abundance of free moisture, not the type of butter that the export trade was demanding, or of a type that would compete successfully with our competitors in our own home markets, viz. the "Prairie Provinces" and New Zealand.

Only two or three creameries grading in 1917 pasteurized the cream for butter-making.

In 1917, there was graded 3,299 samples, eighty-two per cent. of which ranked First Grade. Since, there has been a steady increase in the number of creameries, and in the number of samples graded, until now we have 127 creameries on our list, and in 1922 there were graded 12,586 churnings.

Since 1917, the percentage of First Grade butter had declined gradually until in 1922, only sixty-eight per cent. of butter graded scored in First Grade.

The cause of the general deterioration in quality, is the acceptance by creamery men of all grades of cream at a flat rate per pound of fat.

Where cream has been bought on a graded basis, splendid improvement has been noticed. It is, therefore, quite evident that the future reputation of Ontario butter depends largely on the system practised in payment for the raw material.

Jno. H. Scott, *Official Grader.*

DAIRYMEN'S ASSOCIATION OF EASTERN ONTARIO

OFFICERS FOR 1921.

President—GEO. SMYTHE, Iroquois.
Vice-President—M. N. EMPEY, Napanee.
Secretary—T. A. THOMPSON, Almonte.
Treasurer—JAS. R. ANDERSON, Mountain View.

Directors.

Carleton	W. G. GODKIN, Carsonby.
Renfrew	JNO. G. GIBBONS, Renfrew.
Lanark	JNO. STEELE, Almonte.
Grenville	J. A. SANDERSON, Oxford Station.
Russell	W. H. OLMSTEAD, Bearbrook.
Prescott	A. CARRIERE, Curran.
Stormont	O. E. WERT, Avonmore.
Glengarry	A. J. ROBERTSON, Martintown.
Dundas	GEO. SMYTHE, Iroquois.
Leeds	R. G. LEGGETT, Newboro.
Frontenac	E. CAMPSEL, Hartington.
Lennox and Addington	M. N. EMPEY, Napanee.
Hastings	F. J. KNIGHT, Belleville.
Prince Edward	R. W. IRELAND, Wellington.
North Hastings	S. S. McCOMB, Belleville.
Northumberland	RICH. HONEY, R.R. No. 1, Dartford.
Peterboro	G. A. GILLESPIE, Peterboro.
Victoria	W. J. NEWMAN, Lorneville.

Auditors—J. J. PAYNE, Brinston, and MORDEN BIRD, Stirling.

FINANCIAL STATEMENT FOR 1920.

RECEIPTS.		EXPENDITURES.	
Cash on hand from previous year	$121 34	Brockville pay sheet for directors	$443 35
To members' fees	196 90	Pay sheet No. 2, Toronto	188 30
Government Grant	2,500 00	Prosecutors' salary and expenses	678 92
Receipts from programme ads	320 00	Lecturer's expenses	411 80
Receipts from dairy exhibit	7,256 95	Advertising and Printing	623 35
Money received from prosecutions	1,018 30	Rural Publishing Co., subscriptions to *Farm and Dairy*	196 70
Donations for special prizes	25 00	District meeting expenses	224 39
Interest from the Molsons Bank	3 82	Officers' stationery, stamps, telephone and express	90 55
Owing to the Molsons Bank	743 26	Officers' salaries	600 00
		Official stenographer	90 00
		Expenses from Dairy Exhibit	8,638 21
	$12,185 57		$12,185 57

DAIRYMEN'S ASSOCIATION OF EASTERN ONTARIO
1920

Following is a summarized report of the Forty-fourth Annual Convention of the Dairymen's Association of Eastern Ontario, held in Cobourg, January 6th and 7th, 1921:

The cordiality of the reception given by the officials and business interests of the town was much appreciated by the dairymen, who attended in quite large numbers.

Deep appreciation was shown of the work being done and the advice being given by the agricultural representatives and dairy instructors of the Provincial Department of Agriculture, and it would be well for the dairymen in general, as well as other farmers, to keep in touch with the agricultural representatives as well as the dairy instructors if they wish to derive the greatest benefit from the various services available to all farmers—literature, meetings in the interests of farmers, advice regarding stock improvement, seeds, marketing, etc. A general discussion took place on the provisions of The Dairy Standards Act, and the desire of the gathering was that the Government should provide capable men to do the testing quite independent of the regular employees of the factory.

Considerable discussion took place on the necessity of producers taking greater interest in the manufacture of cheese and butter, and to lend financial support to the work of the Dairymen's Association and the National Dairy Council. The following addresses were made by the speakers indicated:

"The Cost of Milk Production."—A. E. Archibald, Director of Experimental Farms, Ottawa.

"Experimental Work on the Uses of Neutralizers in Cream for Butter Making."—Geo. H. Barr, Chief Dairy Division.

"Quality of Ontario Cheese."—H. W. Coleman.

"Official Grading and Control of Dairy Products for Export."—J. A. Ruddick, Dairy and Cold Storage Commissioner.

"What the Agricultural Representatives are doing for the Dairy Interests."—W. D. Jackson, Parliament Buildings, Toronto.

"Modern Butter Making."—L. A. Zufelt, Eastern Dairy School, Kingston.

"The Work and Financing of The National Dairy Council."—D'Arcy Scott.

Since practically all the information imparted has appeared in literature published by the Departments to which the speakers named are attached, articles are not printed herewith, those interested being requested to write direct to the Provincial and Dominion Departments of Agriculture for information on the lines indicated by the topics given.

The President, Mr. Geo. Smythe, expressed regret that on account of lack of funds it was impossible to hold an Exhibition in connection with the Convention.

"This has been the first season of free trading in cheese since the war, and when the control was removed, prices went skywards for a short while, with a declining market until the present.

"We still have the manufacturing and importation of Oleo in Canada. It was introduced as a war measure and was to cease on the termination of the war. We have also a Dairy Standards Act dormant, so far as cheese is concerned, and increased freight rates. These and various other matters in connection with this business will require your attention.

"We are short in the export of cheese something like 130,000 boxes this season. This condition seems to be chronic, but there were probably more exports in the way of milk, cream, and condensed milk than in former years."

Mr. E. H. STONEHOUSE appealed for greater co-operation on the part of all branches of the industry and for improvement in the quality of the raw material. He stated in part as follows:

"In the broader aspects of the whole dairy industry, if we are to reach higher standards of excellence and successfully compete in the markets of the world, co-operation between the various branches is absolutely essential. If the stream is pure the source must be pure. If dairy products, butter, cheese, condensed milk, etc., are to be of the very highest quality, milk itself must be pure and sanitary. One of the foremost men in the business recently said: 'We have been trying to make good butter and cheese from badly cared for and unsanitary milk, and it cannot be done.' Let us as producers do our part. We look to the distributor to get our product to the consumer in such a condition that he will use more milk; the manufacturer of butter and cheese to make an article of food so nutritious and palatable that their use will be constantly increased, both at home and abroad. Upon their ability to do so depends very largely the price we as producers obtain for our product, and in the co-operation of all branches of the industry working harmoniously together depends the possibility of supplying these essential foods of a quality and at a price well within the purchasing power of all classes of the world's teeming millions."

Honourable MANNING W. DOHERTY, Minister of Agriculture, congratulated the officials of the Association upon the educational features of their convention and expressed appreciation of the service rendered by the instruction staff of the Provincial Department of Agriculture. Mr. Doherty, after outlining the early history of the Province, expressed the opinion that: "As the days and years go by this Province of Ontario will more and more become a dairy province because of the necessity of keeping up the fertility of our farms. In addition to that, with the increased price of land, it becomes more or less necessary, in order to prosper, that farmers shall devote their attention to that branch of farming which offers them the greatest possible turnover per annum, and probably on the ordinary Ontario farm there is no branch of farming which will give the farmers as great a turnover as dairying. With our increasing population in the Dominion and its increasing human demands from year to year, we see the Province of Ontario becoming more and more engaged in dairy farming.

"The immediate problems facing the dairy industry in the Province, to my mind, may be briefly put down as three: first, increased production; second, improved standard grades of quality; third, the finding of suitable, reliable, dependable markets."

Mr. Doherty made a very strong appeal for the improvement of the beef breeds as well as dairy cattle. Mr. Doherty expressed approval of the principles underlying The Dairy Standards Act, and believed that if assurance were given to the producers that the testing would be properly done, the Act would be acceptable.

Mr. G. A. PUTNAM, Director of Dairying, expressed the view that Dairying would continue to be the leading line of agriculture in Eastern Ontario, and advised the dairy farmers to link up their activities in this line with the production of bacon hogs, and poultry, a combination that would present a most dependable and profitable line of agriculture. Mr. Putnam emphasized the

importance of dairying as a money maker, and the products as the most important of our foods. An appeal was made for quality in the raw material, the one essential to success.

Resolutions.

Mr. M. N. Empey moved, and Mr. Alex. Hume seconded, the resolution asking that "The Dairy Standards Act be put into operation at as early a time as the Minister of Agriculture could possibly arrange to have it done." (Carried.)

After considerable discussion on the grading and marketing of cheese, the following resolution was presented:—

"Resolved, that this meeting is in favour of a system being established by means of which all cheese exported from Canada shall be graded before being exported." (Carried.)

The secretary, Mr. T. A. Thompson, in presenting a summarized statement of the year's activities, appealed to the dairymen to provide better factories and to pay the makers a fair wage. He emphasized the great importance of the industry as a creator of wealth and made an appeal for the development of the home market.

Regret was expressed that the finances of the Association would not allow the holding of a dairy exhibit. The Association held eighteen district dairy meetings throughout Eastern Ontario during the year.

Tribute was paid to the memory of Mr. Wm. Brown, President of the Association, and Mr. Henry Glendinning, a past president, and one of the best known dairymen in the Province, and also Mr. E. G. Henderson, of Windsor, one of our best patrons, to whom the Dairymen of Eastern Ontario owe a debt of gratitude, who were claimed by death during the year. These men had been leaders in the industry and prominent at the Conventions for many years.

An address was given by Mr. D'Arcy Scott, secretary of the National Dairy Council, on the work of that organization. For literature published by the Council and information as to its activities, inquiries should be addressed to the National Dairy Council, Ottawa, Canada.

DAIRY INSTRUCTION AND SANITARY INSPECTION.

The following extracts are from the report of Chief Dairy Instructor and Sanitary Inspector, G. G. Publow:

"Notwithstanding the reduction and change in the personnel of the staff of instructors, I feel that the efficiency of the work was well maintained throughout.

"The chief duties of the Instructors are: to visit and inspect the factories as to their sanitary conditions and equipment, to examine into the quality of the cheese, to instruct regarding the manufacture, if found necessary; to examine the milk for its sanitary condition and fitness for cheesemaking and upon request

to test it for adulteration where there is reason to believe that it is being tampered with."

"Visiting the factories at short intervals is a great factor in keeping the cheese of uniform quality and maintaining good sanitary conditions. I am pleased to report a very marked improvement in the sanitary condition of the cheese factories this season; but there are still a few condemned by the Instructors

Instructors and Group 1920	No. of factories in group.	No. of full day visits	No. of call visits	No. of patrons	No. of patrons visited	No. of samples of milk tested for adulteration	No. of samples deteriorated	No. of sediment tests made	No. of factories pasteurizing whey	No. of factories making whey butter
Almonte—										
Freeman Brown	40	64	295	1,563	126	1,301	3	1,010	2	12
Alexandria—										
Fred Wright	39	144	94	1,140	11	395	8	425	.....	.....
Brockville West—										
S. S. Cheetham	43	56	129	1,075	50	1,123	.....	225	.....	22
Brockville North—										
Peter Nolan	43	61	221	1,399	28	1,291	1	375	1	26
Belleville and Prince Edward—										
Hugh Howey	35	52	202	2,205	126	6,263	3	860	.....	12
Cornwall—										
J. Buro	43	70	280	1,364	25	1,212	4	160	5	4
Campbellford—										
W. R. Linn	38	116	112	1,606	20	3,635	.....	1,938	1	13
Kemptville—										
Thos. J. Hicks	47	82	250	1,613	40	768	4	180	.....	8
Kingston—										
Fred Clark	44	48	174	1,330	28	1,428	4	340	4	6
Peterboro—										
R. W. Ward	34	78	319	1,294	75	495	1	331	.....	14
Madoc—										
C. F. Linn	41	94	239	1,248	35	2,176	1	878	.....	12
Morrisburg—										
C. W. Norval	47	117	130	1,446	29	1,068	7	146	.....	40
Perth—										
J. H. Echlin	40	41	263	1,378	70	450	2	135	2	21
Ottawa East—										
H. A. McKinley	49	46	398	1,545	3	1,400	.....	467	.....	4
Ottawa—										
J. A. Mitchell	43	47	378	1,314	27	1,137	.....	649	.....	10
Plantagenet—										
Jos. McAllister	36	41	306	1,103	27	515	2	405	.....	1
Napanee—										
Geo. H. Bensley	38	55	214	2,476	47	5,058	6	209	.....	4
Vankleek Hill—										
Gilbert Rancier	42	50	212	1,150	27	960	3	250	.....	.....
	742	1,262	4,216	26,249	794	30,675	49	8,983	15	209

and it was found necessary to close two of these until the necessary improvements were made, while others were given a warning.

"Six new factories were built and additional improvements on repairs and equipment were made by 368 plants, to the value of $138,768.00.

"Two hundred and nine factories made whey butter to a total of 621,557 pounds, valued at $323,210.00. This exceeds last year by over $18,000. In

addition, 259 factories skimmed the whey and shipped cream to the value of $309,185.

"210 factory meetings were attended by either myself or the Instructors, and I have found these meetings a very effective means of meeting the patrons and discussing the "Production and Care of Milk," and other subjects with them.

No. of factories shipping whey cream	No. of factories paying by test	Average % of fat in all tests made	Lbs. of milk delivered from May 1st to Nov. 1st	Lbs. of cheese made from May 1st to Nov. 1st	Average lbs. of milk to make a lb. of cheese	No. of factories with cool curing rooms	No. of factories which made improvements in buildings or plant	Estimated expenditure, including new buildings	No. of new factories built	No. of new silos built	No. of patrons using milking machines
13	4	3.4	35,093,460	3,156,611	11.11	3	18	$6,255	1	9	32
16	11	3.6	35,267,058	3,221,906	10.94	.....	4	1,845	....	4	38
12	2	3.4	54,540,709	4,770,144	11.43	1	18	10,850	....	4	80
1	.....	3.4	53,406,371	4,747,272	11.25	1	15	3,600	....	10	80
23	.....	3.4	63,547,872	5,602,951	11.35	14	12	8,400	....	37	62
24	12	3.7	48,403,130	4,461,849	10.84	3	36	6,745	....	5	73
23	.....	3.4	46,559,129	4,103,381	11.34	5	30	8,500	....	18	45
21	9	3.4	47,598,170	4,209,330	11.30	2	31	27,000	1	8	62
14	1	3.6	39,276,630	3,560,891	11.03	.....	16	8,150	....	5	29
17	12	3.4	23,778,125	2,069,058	11.49	9	25	5,411	....	34	26
25	.....	3.4	45,616,008	4,009,769	11.36	2	32	5,320	....	7	49
3	.....	3.5	58,455,441	5,324,131	10.98	.....	28	4,500	....	2	50
4	1	3.5	32,973,848	2,955,050	11.15	1	10	3,200	....	15	56
10	9	3.5	54,310,004	5,130,993	10.58	.....	34	11,138	1	20	55
6	22	3.4	48,210,315	4,345,751	11.09	1	12	6,030	2	33	132
6	6	3.7	24,529,222	2,437,479	10.06	.....	16	6,234	....	9	5
21	.....	3.5	68,161,696	6,201,815	11.0	3	13	6,900	....	8	85
20	2	3.6	37,792,800	3,592,471	10.52	.....	18	8,690	1	2	70
259	91	3.5	817,519,988	73,900,852	11.06	45	368	138,768	6	230	1,029

Northern Ontario Report.

"In addition to the 742 cheese factories in operation in Eastern Ontario, 22 were in operation in Northern Ontario (known as the Sudbury district), as compared with 24 last year. One new factory was built and three were converted into creameries, making a total of 6 creameries in operation in that

district last season, which indicates that butter-making had gained in popularity. There has been marked improvement in the cheese factories as well. The following statistics are from Mr. McAllister's report:—

No. of cheese factories in operation	22
No. of patrons	416
No. of cows from which milk for cheesemaking was obtained	3,050
No. of lbs. of milk delivered from May 1st to November 1st	6,417,722 lbs.
No. of lbs. of cheese manufactured from same	634,279 lbs.
No. of lbs. of milk per lb. of cheese	10.11 lbs.

3 factories pay by test.

"One new factory was built and 12 made improvements; the estimated expenditure, including new buildings, was $4,184.

"553 patrons supplied cream to the creameries and 386,233 pounds of butter was manufactured from same.

"The necessity of securing a larger number of well qualified cheese-makers is important. For some reason or other good bright men are passing up cheese-making for other trades and very few are entering as apprentices, so that it is no wonder we are facing an ever increasing shortage of capable factory managers. It is really the producers of milk who should be and are most concerned and affected by such matters as this, for the cheese made belong to them and the market value will be governed very largely by the quality of the cheese as it reaches the consumer, who is after all the person who must be satisfied."

CREAMERY INSTRUCTION IN EASTERN ONTARIO.

L. A. ZUFELT reported regarding creamery instruction in Eastern Ontario:—

I beg to hand in my annual report as Creamery Instructor for Eastern Ontario.

No. of creameries in district	47
No. having pasteurizers	32
Estimated butter for the year 1920	7,250,000 lbs.
Estimated value of same	$4,200,000
No. of call visits made during season	65
No. of full days spent at creameries	13

The instruction work this season was conducted on somewhat different lines than formerly, and instead of trying to visit every creamery as often as possible, I visited only those that were anxious for improvement and were prepared to follow out the instruction given. This method gave very general satisfaction and I was able to concentrate my efforts among these creameries and thus make a decided improvement in the quality of a few rather than a doubtful improvement of the many.

DAIRYMEN'S ASSOCIATION OF WESTERN ONTARIO

OFFICERS FOR 1921.

President—J. Scott, Woodstock.
First Vice-President—J. N. Allen, Dunnville.
Second Vice-President—R. Johnston, Bright.
Third Vice-President—H. Mannell, Woodstock.
Secretary-Treasurer—Frank Herns, Bank of Toronto Chambers, London.

Directors.

T. Ballantyne, Stratford.
Frank Thompson, Bennington.
G. M. Cary, Petrolia.
Jas. Newbigging, Atwood.
Garnet Bain, Lakeside.
Fred Keyes, Elmira.

Representatives.

Western Fair, London—F. Herns, London, and C. J. Donnelly, London.
Canadian National Exhibition, Toronto—F. Herns, London.

Auditors—J. A. Nelles, London; J. C. Hegler, Ingersoll.

FINANCIAL STATEMENT FOR 1920.

Receipts.

Cash on hand from previous year	$85 78
Members' fees	276 00
Legislative grant	2,000 00
Money received from prosecutions	371 00
Money received for special prizes	50 00
Sale of dairy exhibits	2,891 07
Advertising in convention programme	258 00
	$5,931 85

Expenditures

Cash paid for prizes	$526 00
Expenses for convention	152 50
Stenographer's salary	571 50
Directors' expenses	149 50
Postage and stationery, $104.16; Advertising, $111.28	215 44
Printing	283 36
Judges' fees and expenses	58 70
Prosecutors' salary and travelling expenses	185 50
Periodicals for members	197 40
Cost of reporting	60 00
Purchase of dairy exhibits	2,888 35
Office expenses, light, cleaning, and sundries	111 24
Office rent	171 00
Telegrams and telephone, $78.87; Express and cold storage, $30.28	109 15
Half fines paid to factories	185 50
Auditors' fees and expenses	15 00
Interest on bank deposits	3 75
Miscellaneous	2 60
Total	$5,861 49
Balance	70 36
	$5,931 85

DAIRYMEN'S ASSOCIATION OF WESTERN ONTARIO 1920

Following is a summarized report of the Fifty-fourth Annual Convention of the Dairymen's Association of Western Ontario, held in the Masonic Hall, London, on Wednesday and Thursday, January 12th and 13th, 1921.

Co-operation of the chief officials of the city and representatives of the Chamber of Commerce added materially to the success of the Convention. Alderman G. A. Wenige, on behalf of Mayor Little, extended greetings from the City, while Mr. Gerald Pearson represented the Chamber of Commerce.

Considerable discussion took place on the necessity of producers taking a greater interest in the manufacture of cheese and butter and lending financial support to the work of the Dairymen's Association and the National Dairy Council. The following addresses were made by the speakers indicated:

"The Economic Feeding of Dairy Cattle," E. S. Archibald, Director Experimental Farms, Ottawa.
"Cow Testing," A. H. White, Dairy Division, Ottawa.
"The Milk Situation in Ontario," J. A. Ruddick, Dairy Commissioner, Ottawa.
"The Value and Need of Dairy Research Work," Prof. H. H. Dean, O.A.C., Guelph.

Extracts from Directors' Reports.

"Cheese prices were excellent until about September when, owing to adverse exchange rates and the general trend of lowering prices a decline in prices took place, but the general condition is sound, and the future of the basic branch of the dairy industry looks good.

"Butter prices were high during the early part of the season, but began to decline somewhat when the exportable outlet was curtailed through the disturbing factor of exchange rates and the continued control of imports in England. Indications, however, point to a future export trade in Canadian butter, and warn us to exercise every precaution to manufacture a high grade standardized product which will be equally acceptable in the home market.

"Studying the situation as it develops from year to year, the demand for one type of dairy product creates an advance in price until the demand is met with a corresponding rise in price from some other dairy product, the output of which was decreased. In the last analysis the summer prices for dairy products in Canada is for many years to come likely to be controlled to a certain extent at least by the price of our exportable surplus, although at certain seasons of the year local demand affects the situation.

"The exhibit of dairy products in the refrigerated space provided in the dairy building at the Toronto Fair was for the second time placed by the Provincial Dairy Branch and was very favourably commented upon, and was, we believe, the means of bringing more fully to the attention of consumers the importance of dairy product as a food.

"Last year your Directors respectfully recommended to the Provincial Dairy Branch that in addition to the work mentioned, means of inspection and instruction for the cream buying stations should be provided. This recommendation was followed and we believe resulted in greatly improving conditions at these places, especially in testing methods, sanitary arrangements, etc.

"The Provincial Legislature passed an Act at the last session dealing with the testing of milk and cream. The Act, known as 'The Milk and Cream Purchase Act,' should be the means, if judiciously administered, of bringing

about more uniform and careful methods in the testing of milk and cream and eventually establish complete confidence in the test. Careful regulations were drawn, two inspectors for Western Ontario appointed who devoted all their time to the checking up of tests. Your hearty co-operation in connection with the administration of this Act is solicited and we believe it is good dairy legislation."

In the dairy exhibit, Mr. C. J. Donnelly, of London, won the silver cup given by the Imperial Bank of Canada, while Mr. T. J. Newman, of Lorneville, won the silver shield donated by the Toronto Produce Exchange.

DAIRY INSPECTION.

Following are extracts from the report of Chief Dairy Inspector and Sanitary Inspector for Western Ontario, 1920, Mr. F. Herns, London:

The four cheese instructors, in addition to giving instruction in cheese-making, inspecting the milk, the cans, carrying on cow testing, checking milk tests, making sediment tests, looking after the pure cultures, making standard alkaline solution, curd tests, visiting the patrons in connection with defective milk; endeavouring to keep the equipment and general sanitary conditions of the factories satisfactory and the quality of cheese up to standard, included in their work regular visits to the milk and cream stations, powder milk plants, etc., giving every possible assistance in improving the general milk supply.

The three creamery instructors gave instructions in the best methods of buttermaking and general creamery practice; made tests for salt and moisture, endeavouring to bring about greater uniformity in this connection, assisting to remedy any insanitary conditions and generally securing a more uniform type of butter manufactured by the creameries through pasteurization and other up-to-date methods.

The grading station of which Mr. Jno. H. Scott had charge was operated along similar lines to last year, except that no referee work was done at the warehouses on ungraded butter, but the grading was confined entirely to the butter passing through the grading station.

With the many complicated problems arising in dairy products manufactured in Western Ontario and with the raw material passing into so many different channels and with the ever increasing competition for the raw material which makes it difficult for receivers to reject deliveries from which high-class dairy products cannot be made, it becomes every year a more difficult problem to deal with the situation and meet the many technical requirements in keeping up the general standard of quality of our dairy products, especially cheese and butter, and to stimulate the co-operative spirit among the various competitive branches of the industry.

Many factors enter into the general field of progress and the ebb and flow of demand, seasonal and otherwise, is bound at times to be carried too far in one direction, that is to say, over-production of one type of dairy products at the expense of some other.

In August two inspectors were appointed to check up milk and cream tests in accordance with The Milk and Cream Purchase Act, and it is gratifying to know that the majority of the responsible factories are conducting their fat tests carefully and correctly. The careless or ignorant tester, however, requires special attention. The Act should eventually insure uniform methods

of testing milk and cream throughout the Province and bring about confidence in the operation of the Babcock test.

The dairy circulars on "Care of Milk," "Care of Cream," "Milk and Cream Testing," "Cow Testing," "Ice Supply," etc., were all revised and copies furnished the factory men and many of the cream buying stations for distribution, directly from the Dairy Branch, Toronto.

Quality of Cheese.—The past season did not develop any long period of extremely warm weather, therefore it was less difficult than in some former years to maintain the standard of quality. Some factories developed the usual difficulties, which were dealt with as quickly as possible, so that no large amount of defective cheese was produced. The fall make was increased somewhat by a few of the shipping stations turning over to cheesemaking when the outlet to some of the powdered milk plants was curtailed shortly after the middle of September.

There were a few comparatively inexperienced men engaged in some of the factories last season, but it is expected that these will be replaced by more successful factory managers. A number of younger makers are taking charge of some of the factories for next season and they may require considerable assistance to make sure that no losses are suffered by the producers. It is expected that the labour situation will also be relieved and that more normal conditions in connection with the cost of manufacturing may prevail, thus encouraging every one engaged in the cheese business.

Whey Butter.—Of the factories skimming the whey, only nineteen made whey butter at the factory, the balance shipping the whey cream. Again it is pointed out that it is very important that a rich whey cream should be skimmed, cooled immediately after separating to a low temperature and shipped in a sweet condition. The whey cream or whey butter should be handled under such conditions that the market may be maintained under normal conditions for this type of product. All utensils and piping must be kept strictly sanitary. Heating the whey to 155 degrees is always necessary, whether or not skimming is practised, if yeasts and other objectionable flavours which may be transmitted through the whey are to be kept in check, and also as a precautionary measure against the transmission of disease germs to livestock. Paying a premium for first grade whey cream will encourage extra care in production and it is in the interests of milk producers as well as factory managers to establish a market for first grade whey cream.

Milk Cans.—Rusty, insanitary cans are less in evidence now than formerly. The general standard of sanitation in all dairy operations is being gradually raised and all successful factory operators are building up a reputation on this basis as well as upon the quality of the goods manufactured.

Quality of Butter.—The ice supply was abundant and every creamery had a sufficient amount for cooling purposes for the season. Climatic conditions were such that a better quality of cream was secured, less yeasty, sour cream received. The quantity of first grade butter increased and most of the creamery men put forth every effort to improve the quality of the butter with marked success. I wish to express appreciation of the response of the creamery men in this connection and to thank the produce dealers for their efforts to pay a premium for first grade butter.

Cream Buying Stations.—For the first time an instructor was engaged to visit cream buying stations and other buying places and 247 of these buying stations were inspected and the operator given special instructions in cream testing, cream improvement, sanitary arrangements, etc. The majority were

visited several times. Every effort was made to improve the methods of testing the cream, handling cream, the sanitary conditions, equipment, etc. Many of these buying stations are country stores and have no facilities for handling cream. It was found that many operators were not following authentic methods in cream testing and most of the work was concentrated on this point, that is to say, to see that all were complying with The Cream Purchase Act by having properly adjusted scales, weighing the samples properly, taking the samples correctly, reading the tests accurately, using a thermometer and also hot water containers for the test bottles in order that fat readings might be read at a uniform temperature of 140 degrees F. Excellent results have been accomplished and by a systematic "follow up" it ought to result in more accurate cream testing and also make reasonably sure that every operator who tests cream commercially is competent. With the intense competition for cream and so many different plans of purchasing and handling cream it seems a difficult matter to suggest a uniform method for grading and paying for cream by grade in so far as these buying stations are concerned. It looks as though these cream receiving station operators will have to be educated to grade cream. It cannot, however, be too strongly urged upon every one engaged in the industry the absolute necessity for a concerted effort towards further quality improvement, and this applies equally to our home market and to the export trade.

Molds in Butter.—During the past season a number of creameries have had mold trouble, especially with print butter. The general opinion seems to be that the chief cause is insufficient treatment of the wrappers to kill the mold spores and it is recommended that the wrappers be treated with a saturated solution of hot salt brine, making certain that the entire surface of the wrapper receives treatment. To accomplish this it is suggested that a watertight box in which a steam pipe can be introduced be utilized and kept filled with the saturated salt solution in which to soak the wrappers. Care must be taken that this salt solution is strong enough to have a precipitate of salt in the bottom of the tank. In this solution the wrappers are spread out and held long enough in the hot salt solution to kill the mold spores.

Standardization.—It has been possible to standardize the type of cheese produced in the Province through uniform methods adopted by the cheese makers. Uniform methods of instruction has been one of the chief factors in accomplishing these results, together with the ideal type of cheese recommended for export trade being continually kept before every person interested in the cheese industry. Standardization, however, could not have been brought about had the cheese manufacturers failed to take advantage of the technical information offered and to follow continuously the methods known to produce the best type of cheese from the Canadian standpoint. In addition to uniform methods adopted at the factories, a better quality of milk has gradually been supplied to the factories each succeeding year, although sudden changes to warm weather any time during the season still find a considerable amount of over ripe and gassy milk arriving at the factories. Uniform buttermaking methods is just as necessary to be followed at the creameries if we are to standardize and produce a uniform type of butter, but this cannot result unless the buttermakers actually put into practice modern methods which will enable them to make a uniform type of butter. The market is increasing for a mild salted, close textured, long keeping butter, and this can be made only by improving the quality of the cream and giving this cream the very best treatment known, such as pasteurization, etc., after it arrives at the factory.

DAIRYMEN'S ASSOCIATION OF EASTERN ONTARIO

OFFICERS FOR 1922.

President—M. N. Empey, Napanee.
First Vice-President—W. J. Newman, Lorneville.
Second Vice-President—W. H. Olmstead, Leonard.
Treasurer—J. R. Anderson, Mountain View.
Secretary—T. A. Thompson, Almonte.

Directors.

1. Carleton ..... W. D. Godkin, Carsonby.
2. Dundas ..... Alex. McGruer, Brinstons Corners.
3. Frontenac ..... Ed. Campsell, Hartington.
4. Glengarry ..... A. J. Robertson, Martintown.
5. Grenville ..... Jas. Sanderson, Oxford Station.
6. Hastings South ..... F. Knight, Belleville.
7. Hastings North ..... Jas. Haggarty, West Huntingdon.
8. Lanark ..... John Steel, Almonte.
9. Leeds ..... R. G. Leggett, Newboro.
10. Lennox and Addington ..... M. N. Empey, Napanee.
11. Northumberland ..... Richard Honey, Dartford.
12. Peterboro ..... G. A. Gillespie, Peterboro.
13. Prince Edward ..... A. M. Platt, Picton.
14. Prescott ..... Neil Fraser, Vankleek Hill.
15. Renfrew ..... J. G. Gibbons, Renfrew.
16. Russell ..... W. H. Olmstead, Bearbrook.
17. Stormont ..... W. O. Wert, Avonmore.
18. Victoria ..... W. J. Newman, Lorneville.

FINANCIAL STATEMENT FOR 1921.

Receipts.		Expenditures.	
Members' fees	$107 00	Overdraft at Molsons Bank, $743.26; War tax, 55c	$743 81
Legislative grant	2,500 00	Cobourg pay sheets for directors	517 75
Receipts from programme advts.	192 15	Toronto pay sheet No. 2	205 30
Money received from prosecutions	957 50	Prosecutors' salary and expenses	689 99
Premium on American money	2 80	Lecturers' expenses	375 57
Interest at Molsons Bank	6 69	Advertising and printing	496 29
	$3,766 14	Rural Publishing Co., subscriptions to *Farm and Dairy*	83 60
Balance, payment over receipts	455 56	District meeting expenses	337 75
	$4,221 70	Stationery and telephone	66 74
		Officers' salaries	600 00
		Official stenographer	90 00
		Interest at Molsons' Bank	14 90
			$4,221 70

DAIRYMEN'S ASSOCIATION OF EASTERN ONTARIO 1921

Following is a summarized report of the Forty-fifth Meeting of The Eastern Ontario Dairymen's Association, held at the Chateau Laurier, Ottawa, January 5th, 1922:

Mr. Geo. Smythe, of Iroquois, the president, occupied the chair and stated that The Dairy Standards Act, grading, and marketing of dairy products would receive consideration. A full discussion of the provisions of The Dairy Standards Act and the administration of the same was taken part in by representatives of the Dairy Branch of the Provincial Department of Agriculture, producers, and manufacturers. While there was a strong objection to the introduction of the Act on the part of a few, the majority were in favour of the Act.

The evening session opened with words of greeting from Mayor F. H. Plant.

Hon. Manning Doherty expressed the view that $100,000,000 dairy output of Ontario could be easily increased to $200,000,000, and stated that Ontario would become more and more a dairy province. Reference was made to the keen competition which Canada is facing in the markets of Great Britain, an appeal to the dairymen to produce quality and provide an efficient marketing organization and facilities. An outline of the co-operative marketing methods used in disposing of fruit was presented as an inducement for the dairymen to take similar action.

"It is my firm conviction that agriculture is going to be the salvation of this country, and that co-operation is going to be the salvation of agriculture. The Government can do its utmost, but progress will be slow. The Government has spent hundreds of thousands of dollars in this Province and they have engaged men of brain and energy during the last twenty years in many lines, and yet the progress has been very slow and will be slow until such time as we have the industries organized so that the men engaged in agriculture themselves will control their own industry and put into practice regulations that will be for the best interest of the industry.

"The reputation of our butter and cheese matters less to every man in the whole business than it does to the man who is milking the cows, and the man who is milking the cows has got to support actively any policy which has for its object the paying for our products upon the basis of quality, right from the raw product of milk to the finished product of butter and cheese."

"The Dairy Standards Act is a necessary provision if we are to successfully compete with our active competitors. No man can argue against the principle underlying this Act. We have the intelligence and initiative in this country, and we are not going to fall down. If we are to compete successfully we have got to adopt up-to-date methods and we will have to pay for our milk on the quality basis and we will have to insist upon our cheese and butter being sold on the market upon the quality basis.

"A herd of cattle are advertised because of their large production of butter fat, and we pay big prices for these cattle, and we ask our dairymen to go out and buy these high producing cows and bulls coming from high producing females, and then we turn around and say that milk is milk, and that all milk is worth the same price per 100 pounds, and the result is that we have been standing still and to-day it takes one pound of milk more to make a pound of cheese than it did twenty years ago."

Mr. E. H. Stonehouse, president of the National Dairy Council, outlined the great necessity for thorough organization of our dairy interests.

Mr. T. A. Thompson, secretary, presented a report summarizing the season's operations.

Resolutions.

The following resolutions were passed:

(1) Asking that the admission and manufacture of oleo be discontinued.

(2) Approving of The Dairy Standards Act.

(3) That all creameries value butter fat as shown by the grade.

(4) That both the Federal and Provincial Governments be asked to further grade our butter and cheese, especially for export.

The convention protested against the proposed regulation requiring that all boxes of cheese be bound twice with wire before being exported.

Addresses were given by officials of the Dominion Department of Agriculture as indicated below:—

"Dominion Educational Butter Scoring Contest," J. A. Ruddick, Dairy Commissioner; G. H. Barr, Dairy Division.
"Cheese Grading at Montreal," Jos. Burgess, Chief Dairy Produce Grader.
"The Food Value of Dairy Products," Miss Helen Campbell, Dairy Division, Ottawa.
Papers were given by W. H. Sproule, O.A.C., Guelph, on "Quality of Butter as affected by Methods of Manufacture," and T. H. Lund, O.A.C., on "The Butter Maker's Interest in Micro-organisms."

Since practically all the information contained in the above papers has appeared in literature published by the Departments to which the speakers named are attached, articles are not printed herewith, those interested being requested to write direct to the Provincial and Dominion Departments of Agriculture for information on the lines covered in these addresses.

GRADING IN DAIRYING.

The Hon. W. R. Motherwell, Minister of Agriculture for Canada.

Agriculture, like so many occupations, is going through a testing time, not only here but probably throughout the entire world, and I am quite within the mark when I say that no branch of agriculture is standing up to that test better than the historic old dairy cow. You know many of us westerners left this land of the east many years ago to get away from the dairy cow, but it still stayed with us, because we found in times of stress we had to rely upon it.

The speaker outlined the development of the grading of butter in the Western Provinces and continued:

We wondered how any person could recommend any other system. I find, however, that there is a real difference of opinion. You have so many ramifications of your dairy enterprise; so many products of the dairy; so many interests involved, that any change touches so many people that there is bound to be somebody who will object, and it is very seldom that you can bring about any reform in the dairy business, or any other business, without an objection from somebody. They will say their interest is in danger, but probably their interest is not as much in danger as they think it is. However, it is gratifying to know that we are making progress in that direction. Not only here but all over Canada dairy products and other farm products are being sold according

to their quality. The time has come when we must give some heed to the question of grading because we have to compete with other countries for the markets of the world, and they are just as well qualified to make good butter as we are.

After referring to the fact that Australia, New Zealand and other countries are grading, the Hon. Mr. Motherwell continued:

It is not a question any longer of wondering whether it is optional or not, but it seems to me the time is hastening upon us, in view of the large quantity of dairy products, and the high prices that are obtained for the best of them, if we are to hold the markets of the world and hold the reputation for quality, then we have got to adopt such methods as will bring about the best results, and I cannot conceive of any other method that will secure the very best quality than by paying on the basis of quality. What is the inspiration to excel unless you are paid for excellency of quality.

I know how difficult it is to make changes. We have to respect established institutions, but we have come to the time when we must take these things to heart, and if we want to remain in the market we must adopt every conceivable means to get quality. There is nothing more potent towards that end than the grading system.

The speaker then emphasized the importance of the pure-bred sire in the improvement of stock and the necessity of furnishing a continuous flow of high-class goods in order to obtain and hold markets.

DAIRY INSTRUCTION AND SANITARY INSPECTION, 1921.

The following are extracts from the report of G. G. Publow:

This has been what I consider to have been probably the most difficult season for manufacturing cheese since my connection with the dairy industry.

We had an exceptionally long period of hot weather with high temperature prevailing both day and night. We had great shortage of rainfall with the resulting chain of consequences, such as shortage of grass and other feeds, shortage of water in wells, necessitating in many instances the driving of cows long distances twice a day to water. There was also the effect of water shortage in the lack of facilities for cooling the milk. In many cases there was a shortage of water at the factories, and uncleanliness of utensils and equipment was naturally to be expected.

The extreme temperature, coupled with the lessened degree of sanitary precaution, stimulated the growth of undesirable bacteria and yeasts, the latter being, I believe, more destructive to the cheese quality than at any previous time.

All these conditions we did our best to compete with, but unfortunately the great majority of milk producers had not heeded our advice of many previous years to make provision to combat these natural enemies, and as a result we had simply to make the best of what we had.

For a number of years it has been taking more and more milk to make each pound of cheese, and this year it required more than ever, 11.27 pounds.

Many of us can easily remember not so many years ago when most factories were able to secure easily ten pounds of cheese from a hundred pounds of average milk. Each year for a good many seasons the yield has been getting smaller, until this year it is considerably less than 9 pounds.

I wonder how many of our factorymen or patrons ever stop to consider what this means from a money standpoint. Just to give you an idea of what

the difference in yield, pound for pound of milk, between 1920 and 1921 amounts to, let me tell you that, placing the average value of cheese at 18 cents per pound, the difference amounts to $343,186.

Our Babcock tests for fat in the milk show that the average richness is practically the same as during 1920, so that the lessened yield of cheese is

Instructor and Group 1921	No. of factories in group	No. of full day visits	No. of call visits	No. of patrons	No. of patrons visited	No. of samples of milk tested	No. of samples of milk deteriorated	No. of sediment tests made	No. of factories pasteurizing whey	No. of factories making whey butter
Almonte—										
Freeman Brown	36	75	457	1,600	221	1,258	3	425	2	10
Alexandria—										
Fred Wright	40	78	193	1,278	93	842	3	442	2	.....
Brockville West—										
S. S. Cheetham	49	56	196	1,235	50	1,140	2	150	.....	21
Brockville North—										
Peter Nolan	44	52	207	1,395	28	1,198	4	126	1	27
Belleville and Picton—										
Hugh Howey	36	48	262	2,478	142	3,200	4	230	2	10
Cornwall—										
J. Buro	43	74	283	1,422	125	1,059	5	175	5	3
Campbellford—										
J. A. Murray	37	80	231	1,620	105	2,195	6	107	1	11
Kemptville—										
T. J. Hicks	45	71	343	1,569	44	2,382	4	200	.....	7
Kingston—										
Fred Clark	41	56	192	1,355	24	1,438	6	420	5	6
Peterboro—										
R. W. Ward	35	59	405	1,348	140	1,751	5	40	.....	14
Madoc and Stirling—										
C. F. Linn	41	88	244	1,316	121	1,451	7	300	.....	13
Morrisburg—										
C. W. Norval	47	107	97	1,452	26	1,220	2	420	.....	38
Lanark—										
J. H. Echlin	38	46	286	1,320	285	600	.....	160	2	20
Ottawa East—										
H. A. McKinley	48	55	433	1,518	72	1,914	.....	654	.....	6
Ottawa—										
J. A. Mitchell	49	50	353	1,575	37	2,932	.....	235	.....	12
Plantagenet—										
Jas. McAllister	27	28	287	793	23	673	3	190	.....	1
Napanee—										
G. H. Bensley	33	71	200	2,196	158	4,320	3	180	.....	4
Vankleek Hill—										
Gilbert Rancier	44	69	427	1,197	18	1,259	1	96	.....	.....
	733	1,163	5,096	26,667	1,712	30,832	58	4,550	20	203

undoubtedly due almost entirely to the inferior quality of the milk supply due to other causes, and the greatest of these other causes is the lack of care the milk receives after it is produced and before it reaches the factory.

For many years all the educational forces of our Governments have been endeavouring to impress upon dairymen the value they would derive from better methods of caring for the milk supply, but it seems that very little improvement has been made along this line. I have been particularly impressed with this fact this year, and at many of the meetings which I have attended I have asked for a showing of hands of those who had actually suitable equipment

for caring for their milk supply, only to find a scattered few in the audience. How much longer our dairymen will fail to heed our advice in this matter I do not know, but let me say that failure to properly cool the milk and keep it cool till it reaches the cheese factory is costing them over one million dollars a year.

No. of factories shipping whey cream	No. of factories paying by test	Average % of fat in all tests made	Lbs. of milk delivered from May 1st to Nov. 1st	Lbs. of cheese made from May 1st to Nov. 1st	Average lbs. of milk to make lb. of cheese	No. of factories with cool curing rooms	No. of factories which made improvements in building or plant	Estimated expenditure, including new buildings	No. of new factories built	No. of new silos built	No. of patrons using milking machines
17	5	3.4	39,626,562	3,516,659	11.26	4	17	$5,575	....	11	35
7	14	3.6	39,634,980	3,719,736	10.65	.....	19	4,143	....	10	33
14	2	3.4	59,222,856	5,098,317	11.59	2	42	18,650	2	3	150
1	.....	3.4	54,851,184	4,766,184	11.50	1	10	4,210	....	11	85
23	.....	3.3	65,909,992	5,554,246	11.68	15	9	5,100	....	9	76
24	17	3.6	54,152,330	4,896,387	11.05	3	12	4,500	....	25	93
23	.....	3.3	49,865,313	4,300,196	11.49	4	27	8,461	1	14	51
22	11	3.4	50,334,994	4,324,312	11.64	2	28	5,530	....	8	98
13	1	3.5	39,325,000	3,452,590	11.39	.....	7	4,080	1	6	29
15	11	3.3	27,344,374	2,393,245	11.42	11	29	3,965	....	17	38
23	.....	3.3	46,655,745	4,323,751	11.48	2	2	1,000	....	16	46
5	2	3.4	60,103,700	5,463,972	11.11	.....	26	10,000	2	24	84
1	2	3.4	37,601,083	3,273,064	11.15	.....	11	8,865	1	27	50
13	6	3.6	59,373,734	5,522,260	10.70	.....	15	8,975	1	39	97
10	25	3.4	63,132,504	5,635,651	11.18	.....	14	10,300	....	35	200
3	7	3.7	19,069,107	1,815,037	10.51	.....	12	1,718	....	5	3
21	.....	3.5	69,547,673	5,443,704	11.13	2	12	6,782	....	17	92
9	2	3.6	40,043,194	3,666,900	10.89	.....	19	5,800	....	2	70
244	105	.....	869,795,325	77,165,711	.....	42	311	$117,654	8	274	1,330

In addition to loss in yield, we have the losses due to inferior quality of the cheese, and I want to make this also a subject of special discussion.

During the past season we have had more inferior cheese than for a good many seasons. As a cause of this we may blame the weather with all its chain of consequences, but why should we be at the mercy of the weather when we know how to prevent such defects at comparatively small individual cost.

But tremendous as this loss may seem, I do not wish to leave the impression that the milk producers are to blame entirely for all of the cheese defects. They are not.

During the past season the greatest single defect in our cheese was, I think, due to what is known as the bitter yeast, an organism which has been giving us more or less trouble for a number of years, but which reached much greater proportions in 1921.

I might say for your information that the effect of this yeast organism, as the cheesemaker encounters it, is to influence the process of cheese manufacture to such an extent that it is rather difficult to firm the curd while it is in the whey unless considerably higher temperatures are used, and if the curd is not properly firmed, as the process goes on there is a tendency for the curd to soften or partially liquefy, with heavy losses in the yield of cheese.

If you were to ask me the cause of this, our greatest cheese defect, I would say whey tanks, which naturally includes all the apparatus with which the whey comes in contact.

During the past season I had occasion to respond to a good many special requests from factorymen to personally go to their assistance when they were having trouble of this nature, and while the conditions I have found may have varied in degree the general source of trouble was the same.

In trying to locate such defects, I might say that our usual routine is about as follows: A sample of milk from each patron is taken in a glass jar and fermentation tests made. By doing this we can tell if the milk from one or more farms is responsible. In some factories where the cheese were defective, I have found the milk of every patron seeded with "yeast."

After investigating the milk supply we then look over the factory equipment and surroundings, and to avoid too much detail in explanation, let me say that what we invariably find is this: The iron pipes which conduct the whey to or from separators or to whey tanks are usually heavily coated on the inside with a deposit after one or more years' service, and this deposit acts as a seeding place for all whey, which in turn is carried back to each individual patron, only to re-infect the milk that will come to the factory on the following day; and so the cycle of seeding goes on from day to day, being naturally worse in hot weather.

We have been able to remedy this condition by thoroughly cleaning all pipes and equipment, usually having to burn out the pipes, and by pasteurizing the whey.

Report of Cheese Factories and Creameries in Northern Ontario.

Cheese Factories.

No. of cheese factories	22
No. of patrons	423
No. of cows from which milk for cheesemaking was obtained	3,023
No. of lbs. milk delivered from May 1st to November 1st	6,379,488
No. lbs. of cheese made from May 1st to November 1st	612,106
Average lbs. of milk per cow for six months	2,110.31
No. of samples of milk tested	39
No. of samples adulterated	1
No. of sediment tests made	39
Names of factories that pay by test: St. Charles, Maple Leaf, Farmers' Hope, Solar, C.P. 165, Bonfield, all on straight method.	
Average lbs. of milk to make lb. of cheese	10.43
Name of new factory built: Farmers' Hope.	
No. of factories that made improvement	1
Estimated expenditure including new building	$2,500 00

Creameries.

No. of creameries	7
No. receiving cream in individual cans	7
No. of patrons shipping cream	486
No. of lbs. of butter manufactured	363,983

Value of same	$128,480
No. of new creameries in operation	1
No. of creameries that made improvement, 1; expenditure	$535

Realizing as I do how much less market there is now than formerly for undergrade cheese, and how much financial loss is incurred by cheesemakers and their patrons through defects that might be prevented, I naturally am anxious that the services of our staff of instructors should be productive of more and more lasting benefit. I do not believe we have the slightest reason to fear for the future of the cheese industry in Eastern Ontario if we make any reasonable attempt to put into practice what we all know to be necessary to the making of good cheese. Let us then keep these points in mind. Let the losses sustained by many in 1921 be a permanent lesson for the future, and begin now to make provision for such a season in 1922 that will make us forget the difficult season just closed, and of which I have had the honour to present this report.

CREAMERY INSTRUCTION IN EASTERN ONTARIO.

Mr. L. A. Zufelt reported as follows regarding creamery instruction and the general conditions of the butter industry in Eastern Ontario:

Creameries in operation	54
No. creameries equipped with modern pasteurizers	47
New creameries established	7
No. remodelled or rebuilt	3
No. patrons supplying cream, about	15,000
Average price received for butter	38c

The quality of the butter made in Eastern Ontario is now of a fairly uniform type, and the makers are to be congratulated on the excellent showing they have made at the various exhibitions and scoring contests.

Special Instruction.—The special course of instruction given to the creamerymen each year at the Eastern Dairy School is largely responsible for the excellent standing of Eastern Ontario butter. It has created a friendly rivalry wherein each maker is endeavouring to produce a superior quality. They have come to realize that whilst they are competing with each other for business they must also co-operate and work together in order to promote quality.

Defects in Quality.—The defects still existing in our butter are due altogether to the acceptance of badly fermented cream rather than to any want of knowledge or lack of proper methods of manufacture. This is our big problem for immediate solution: "How to get rid of the small percentage of inferior cream which is affecting our whole output of butter." I think I am safe in saying that 90 per cent. of our inferior butter is due entirely to the receipt of cream absolutely unfit to be made into butter.

There is only one remedy that I can see that would be effective, and that is for all creamerymen to agree to absolutely refuse to accept cream of this character. I am satisfied that if we could eliminate this one character of cream we would not produce one pound of second grade butter in Eastern Ontario.

General Conditions.—The creamery industry is in a very satisfactory condition. Most of the plants are well equipped and are turning out a fairly satisfactory quality. Owing to the peculiar conditions prevailing whereby 80 to 90 per cent. of the entire output goes direct from the factory to the retail trade, we have not been able to establish a reputation for quality in the large wholesale centres. What little butter does find its way to these markets is hardly representative, and is made up of odds and ends which the creameries have on hand after supplying their regular trade.

DAIRYMEN'S ASSOCIATION OF WESTERN ONTARIO

OFFICERS FOR 1922

President—J. N. Allen, Dunnville.
First Vice-President—R. Johnston, Princeton.
Second Vice-President—Harry Mannell, Woodstock.
Third Vice-President—F. A. Keyes, Elmira.
Secretary-Treasurer—F. Herns, London.

Directors.

T. Ballantyne, Stratford.
Garnet Bain, Lakeside.
F. A. Thompson, Embro.
J. Newbigging, Listowel.
G. M. Cary, Petrolia.
H. York, Harrietsville.

Representatives.

Western Fair, London.—F. Herns, London; C. J. Donnelly, London.
Canadian National Exhibition, Toronto—F. Herns, London.

Auditors—E. Nelles, London; J. C. Hegler, Ingersoll.

FINANCIAL STATEMENT FOR 1921.

Receipts.		Expenditure.	
Cash on hand from previous year	$70 36	Cash paid for prizes	$523 00
Members' fees	282 00	Expenses of convention	188 43
Legislative grant	2,000 00	Stenographers' salary, $598.00; Directors' expenses, $156.65	754 65
Money received from prosecutions	707 00	Postage and stationery, $99.58; Printing, $300.85; Advertisements, $86.60	487 03
Donation for special prizes	50 00	Judges' fees and expenses	53 55
Sale of dairy exhibits	2,330 57	Special officer's salary, $211.75; Expenses, $141.75	353 50
Advertising in convention programme	332 00	Periodicals for members	198 80
		Cost of reporting	35 00
		Purchase of dairy exhibits	2,327 56
		Office expenses, light, cleaning and sundries	106 80
		Office rent	180 00
		Telephone and telegrams	80 87
		Express and cold storage charges	30 20
		Half fines paid to factories	353 50
		Auditors' fees and expenses	15 00
		Refund to members	1 00
		Interest on overdraft	5 41
		Purchase of cheese for scoring competition	13 82
Total	$5,771 93	Total	$5,708 12
		Balance	63 81
			$5,771 93

DAIRYMEN'S ASSOCIATION OF WESTERN ONTARIO 1921

Following is a summarized report of the Fifth-fifth Annual Convention of the Dairymen's Association of Western Ontario, held in Masonic Hall, London, January 11th and 12th, 1922:

The President, Mr. J. Scott, Woodstock, presided, and in addressing the delegates stated: "In 1864, only 58 years ago, the first cheese factory was started in Canada, and in 1874, 48 years ago, the first cream separator was imported. In 1883 the first condensed milk factory was opened at Truro, N.S., and there are now 28 condensed and powdered milk plants in Canada, many of which are located in Ontario.

"To the introduction of the factory system of making cheese and butter and other dairy products, the invention of the cream separator, the establishment of cold storages, improved methods in milk production and manufacturing, better factory equipment, scientific research and supervision through sympathetic Government Departments, dairying owes its modern development."

Extracts from Reports of Directors Covering Season of 1921.

While there was a partial failure of crops in some localities and unfavourable weather conditions over a considerable period, on the whole the past season for Western Ontario dairying may be considered as good.

In July, owing presumably to dull markets, one of the largest condensed milk factories closed. This made it necessary to open cheese factories that had been closed, in order to handle the milk. Part of this milk was distributed among cheese factories already operating in the neighbourhood, while some of the milk was skimmed and the cream shipped to the creameries.

The usual demand upon the cheese factories for market milk during the late fall did not develop to the same extent as in previous years, and therefore the normal output of fall cheese was maintained up to the end of the season. A number of cheese factories and most of the creameries will continue operations this winter.

A considerable quantity of cream was shipped over the border in the fall months, as the market and exchange rates were favourable.

The past season indicates that the period of abnormal conditions is passing, and that the balance of production between cheese, butter and other milk products is gradually being restored. There will not likely be in the future the marked swing from one line of dairy production to another, irrespective of the resulting disturbance eventually created in the general markets.

In the last analysis, the summer prices for dairy products in Canada is, for many years to come, likely to be controlled by the price of the exportable surplus.

An encouraging sign of the times is that milk producers are realizing the importance of taking a broad-gauge view of the manufacturing of dairy products, and several new, up-to-date factories are under construction, which factories when in operation will tend towards greater permanency in the industry. It may also be mentioned that several large cheese factories which were either closed or the milk diverted into other channels have again returned to the cheese industry.

The exhibits of dairy products in the refrigerated space provided in the dairy building at the Toronto Exhibition was for the third time placed by the

Provincial Dairy Branch, and was, we believe, a means of bringing more fully to the attention of consumers the importance of dairy products as a food.

The Cream and Milk Purchase Act has been the means of bringing about more uniform and correct methods in testing milk and cream. The Regulations of this Act will assist in securing uniformity under the Dairy Standards Act. Your hearty co-operation in connection with the administration of these Acts is solicited.

Mr. E. H. Stonehouse, President of the National Dairy Council, referred to the keen competition with which Ontario dairy products is faced in high quality goods from other provinces of the Dominion and foreign countries, and made a strong appeal to the dairymen to organize thoroughly and on sound business lines, both for production and marketing. He also said:

"While a great deal has been done for the dairymen in the passage of certain legislation during these last two or three years, the fact remains that it is up to us to help ourselves. We have had assistance (there is no question of that) maybe too much, and haven't been thrown upon our own resources enough. We have trusted to Governments or departments to do a whole lot of things for us we should have done for ourselves, with the utmost advantage to ourselves.

"In the first place, we producers must have, as I said before, an intelligent knowledge of the requirements. Then we must have legislation, because we will not, thousands of us, adopt anything, even in our own interests, if it is left within our own control or left to our own option. That is, there will be thousands of us, out of the hundred thousand men, possibly, who will say, 'We will do nothing, we will take no steps in this regard,' and if we do not take these steps we are the people who are going to suffer.

"The thought I wish to leave is that throughout the whole industry, from producer to ultimate consumer, we must have co-operation as far as our country is concerned, if we are going to compete in the markets of the world with our sister nations in the race with us."

In the absence of the Hon. Mr. Doherty, Dr. J. H. Grisdale, Deputy Minister of Agriculture for the Dominion, gave a very interesting address on "The Development of Agriculture in Canada."

In the first place, we must produce as cheaply as possible. In discussing corn this afternoon, I attempted to show that if we are to produce milk cheaply we must use cheap food, and corn was certainly the cheapest, and I would encourage every farmer to have a good large silo on his farm and devote a good large portion of his farm to corn for milk production. We must also produce freely. That is an absolute necessity. It may not be as profitable for the time as we would like, but if we allow ourselves to get out of the market it is doubly difficult to get back. For instance, take our bacon industry, if we are satisfied to keep on producing uneven carcases of bacon, good to-day and poor to-morrow, one side a model and nine or ten others in the same crate models of what they ought not to be, we cannot expect to hold our place in the bacon market. If we keep on that way, we will certainly lose that market, and then to get it back, wrench it from the Danish or Irish or Belgians, which will be exceedingly difficult, if not quite impossible.

It is essential, therefore, that we keep on producing, and at the same time endeavour to improve the quality. Efficiency is what is needed in all our production work. Efficiency is understood by the Canadian very often, as doing it in the way most convenient and demanding least exercise. Efficiency as understood by the European, is very often quite a different thing.

Let us, therefore, unite and work along these lines, specializing and getting our products known by the quality, not quantity, and we can do it, because we have the conditions and the products that will command the very highest rank in products of that kind. We can start with our dairy products, there are none better. New Zealand has outranked us in quantity, but not in quality, They can sell their butter here, perhaps, but they cannot beat us in quality; and the same with cheese. We have the climatic conditions if we only exert ourselves and use a little efficiency in the manufacture of this butter. There are very few products indeed that cannot be produced in this Dominion of ours, of just as high, if not higher quality than anywhere else in God's world.

The following addresses were also given, and persons desiring information along the lines indicated will please write the persons concerned:

"Corn for the Western Ontario Dairy Farmer," Dr. J. H. GRISDALE, Deputy Minister of Agriculture for Canada.
"The Marketing of Dairy Produce," J. A. RUDDICK, Dairy Commissioner, Ottawa.
"Dominion Education Butter Scoring Contest, 1921," GEO H. BARR, Chief, Dairy Division, Ottawa.
"Butter Wrappers and Cartons," A. L. GIBSON, Dairy Chemist, O.A.C., Guelph.
"Dairy Investigations Made in 1921," Prof. H. H. DEAN, O.A.C., Guelph.

DAIRY INSTRUCTION AND SANITARY INSPECTION, 1921.

Following is a summary of the report of Chief Dairy Instructor and Sanitary Inspector, F. HERNS, London:

There were no changes in the plans of dairy inspection, instruction, grading, etc., during the past season. Four cheese and four creamery instructors, one inspector for cream buying stations, and two inspectors for checking up milk and cream tests, were employed. Two official butter graders and two assistants, one to make Storch tests and one as general office assistant, were employed at the Toronto butter grading station.

Many factors enter into the field of progress and it becomes a more difficult problem each year to meet the many technical requirements in maintaining the general standard of quality of our dairy products.

It is evident that the balance of production was overthrown by the abnormal demand during the war period for milk products other than cheese and butter, but indications point to a readjustment of output and values.

FACTORIES.—114 factories were operated.

Five cheese factories that were closed in 1920 were opened for cheese making and several factories that shipped milk in 1920 made cheese. 43 factories were owned by producers and 71 by private individuals.

QUANTITY OF CHEESE, 1920.—There were 13,155,517 pounds of cheese manufactured in Western Ontario in 1920. The average number of pounds of milk required to make one pound of cheese was 11.4. The average price per pound of cheese was $0.267. 239,575,484 pounds of milk was utilized in the market milk, condensed and powdered milk trade. 77,989 pounds of whey butter was manufactured and whey cream sold to the value of $71,831.67. The estimated increase in the output of cheese for 1921 is 25 per cent. The total value of dairy products for Western Ontario for 1920 was $27,166,811.

QUALITY OF CHEESE, 1920.—During many weeks of the past season extremely warm weather prevailed and this period will long be remembered as one of the most difficult in the history of the industry to maintain the standard of quality.

A number of factories developed the usual warm weather difficulties, which were dealt with by the instructors as quickly as possible, and no large lots of defective cheese were produced. Many cheese, however, were badly heated in warm curing rooms and the keeping quality was therefore in some cases not all that could be desired. There were also a few acidy cheese, which was unusual, as the factories have, except under unusual conditions, practically eliminated this undesirable type of cheese. The fall cheese were of very fine quality and the standard was maintained throughout this period. Surplus whey at a number of factories made it difficult to pasteurize the whey, with the result that there was a tendency at these factories towards the old difficulty of yeasty cheese. Any neglect in proper whey pasteurization will certainly mean at certain seasons the delivery of some milk with this defect, and this condition must be avoided if the factories are to be free of this old trouble.

Lactometer Tests.—18,576 lactometer tests were made and 635 milk sediment tests; 124 patrons were visited in connection with defective milk.

Whey Butter.—Of the 74 factories skimming the whey, 29 made whey butter and 52 sold the whey cream. One factory made casein from the skim milk.

Pay for Milk by Test.—22 cheese factories, 5 shipping plants, all the condensing plants and all but two of the milk powder plants paid for milk by test.

Annual and District Meetings.—46 annual meetings and 5 special district meetings were attended by the instructors and myself. Total attendance of producers, 2,887.

Expenditure for Improvements.—Two new cheese factories were built at a cost of $9,000, and one new shipping plant costing $50,000. Several new plants are either under construction or contemplated for 1922.

$42,780 is the estimated expenditure for factory improvements.

CREAMERY INSTRUCTION.

F. Herns, London, presented the following report as Creamery Instructor for 1921:

Creameries.—157 creameries were given 445 full day visits and 128 call visits by the four creamery instructors.

Quality of Butter.—We entered into the season of 1921 with a short ice supply, and when warm weather developed and continued for a long period, it had the usual effect upon the quality of the cream, and therefore upon the quality of the butter. The percentage of yeasty, sour, over-ripe cream delivered was greater than the previous year, and, although the creameries did their best to cope with the situation, there was an amount of second grade butter produced, while some of the butter which graded first grade when made, lacked keeping qualities. Had it not been for the improved cooling facilities at a number of creameries, pasteurization, etc., the percentage of second grade butter would no doubt have been greater.

Quantity of Butter.—Western Ontario creameries manufactured in 1920, 29,743,820 pounds of butter. Adding 691,236 pounds of butter made at the cheese factories gives a total production of 30,435,056 pounds. This is an increase over 1919 of 4,076,282 pounds. Estimated increase for 1921 is 8.4 per cent.

Patrons.—56,489 patrons supplied cream to the creameries; the average per cent. of fat in the cream was 29.6 per cent.

Moisture in Butter.—The average moisture content of 980 samples of butter was 15.31 per cent.; 150 samples contained over 16 per cent. moisture, and were taken from 64 creameries; 98 creameries have moisture test scales. The moisture test should be used by every creamery man and no butter should be allowed to leave the creamery containing excess moisture.

Salt.—The average salt used and retained in the butter as indicated by 706 salt tests made was 4.23 per cent. and 2.97 per cent. respectively.

Coil Vat.—110 creameries now have coil vats, a distinct improvement in equipment.

Cream Testing.—95 creameries made daily tests; 31 creameries tested semi-monthly; 20 creameries tested monthly; 53 creameries carried composite samples of cream; 15 creameries have electric testers; 120 creameries steam turbine testers and 14 creameries hand testers; 76 creameries stir and sample cream direct from the cans; 24 creameries dump the cream in a large can, stir and take sample; 42 creameries have samples taken by the hauler; 1 creamery used McKay sampler.

Cream Test Scales.—96 creameries used 4 bottle scale; 19 creameries used 12 bottle scale. The 12 bottle scale has not been found as accurate as the scale of lesser load. These scales have a tolerance of 8 to 20 milligrams, and therefore any weights that are much over or under this tolerance are not correct.

In order to eliminate all incorrect or unstamped 9 and 18 gram weights, such weights are being replaced by correct, stamped weights. The instructors were given authority by the Federal Weights and Measures Department to exchange the unstamped weights that may be found, with correct stamped weights supplied them. This will eventually eliminate any difficulty on this point as regards accurate cream testing. Every precaution should be taken to keep cream test and moisture test scales clean and in a place where they will not be exposed to sufficient moisture to affect the bearings.

Pasteurize the Cream.—79 creameries pasteurized the cream, an increase of 29 over 1921; 55 creameries heated to 170 degrees for 10 minutes; 11 creameries to 160 degrees; 5 creameries to 180 degrees. Any attempt to pasteurize the cream without proper cooling facilities will result in failure.

Neutralize the Cream.—62 creameries neutralized (reduced the acidity of) sour cream before pasteurizing, an increase of 34 over 1920; 34 creameries used milk of magnesia lime; 10 creameries used hydrated lime; 7 creameries used Wyandotte; 2 creameries used bi-carbonate of soda, and 1 creamery used caustic soda.

Mechanical Refrigeration.—45 creameries now have mechanical refrigeration, and the average temperature of these storages was 26.5 degrees, compared with an average temperature of 49.5 degrees for the ice-refrigerated storages.

Grade Cream for the Churn.—9 creameries graded the cream into first and second grade before pasteurizing and churning.

If the mixing of first and second grade cream is practised, then the average quality of the butter will be influenced by the second grade cream. There is every reason to believe it will pay all creameries to separate the different grades of cream and churn separately these grades, as the increased price for No. 1 grade butter will more than make up for the price which may be obtained for the average mixed quality.

Expenditure for Improvements.—3 new creameries were built at an estimated cost of $30,000, and $129,360 is the estimated value of creamery improvements.

Cream Buying Stations.—279 cream buying stations were visited regularly and the operators given special instruction in cream testing, cream improvement, sanitary arrangements, etc. The cream test samples were checked in accordance with the regulations under the Cream and Milk Purchase Act, as were also the samples of all other plants where payment was made by test.

Excellent results have been accomplished, and by systematic inspection and instruction every cream buying station operator who tests cream commercially should become competent. Many of these cream-buying stations are country stores, and have no facilities for handling cream. If cream grading is to become successful in Western Ontario, the operators of these cream receiving stations, if continued, must be educated to grade cream.

Yeasts and Molds in Butter.—Professor Lund, Bacteriologist at the O.A.C., continued to examine samples of butter each week received from the grading station. Valuable information in connection with the sanitary conditions of the creameries, as indicated by the yeast and mold count of the butter made from pasteurized cream, was obtained, and defective manufacturing methods were detected which otherwise might have passed unnoticed. I wish to express appreciation of the work done by Professor Lund and his assistants in this connection.

Standard Cream Test Bottles.—May I again point out that there are too many types of cream test bottles on the Canadian market. Some ought to be eliminated, and only approved types of standard bottles be available. In this connection it may be mentioned that the dim line so frequently found on test bottles after long use makes it difficult to read the percentages of fat. The readings may be made clear by the use of a specially prepared black or red enamel.

Resolutions.

Among the resolutions passed were the following:

Expression of appreciation of the co-operation of the citizens and public officials of London and for the free use of the Masonic Hall.

Thanks to the Canadian Salt Company for the very handsome badges presented to the members.

Appreciation of the assistance rendered by Provincial and Federal Departments of Agriculture.

A recommendation that a temperature of 170 degrees for ten minutes be the standard for the pasteurization of cream for butter-making.

Opposing the proposed regulation requiring the wiring of cheese boxes.

Asking that the admission and manufacture of oleo in Canada be discontinued, as its use is now detrimental to the best interests of the country.

Pledging support to legislation making the grading of cream compulsory.

DAIRYMEN'S ASSOCIATION OF EASTERN ONTARIO.

OFFICERS FOR 1923.

President—Wm. Newman, Lorneville.
Secretary—T. A. Thompson, Almonte.
Treasurer—Jas. R. Anderson, Mountain View.

Directors.

Renfrew	J. G. Gibbons, R. R. No. 3, Renfrew.
Carleton	W. G. Godkin, Carsonby.
Grenville	Jas. Sanderson, Oxford Station.
Lanark	M. B. Cochrane, R.R. No. 1, Almonte.
Russell	W. H. Olmstead, Leonard.
Prescott	Thos. Sauve, St. Isidore.
Glengarry	A. J. Robertson, Martintown.
Stormont	W. O. Wert, Avonmore.
Dundas	Alex. McGruer, Brinston.
Leeds	Geo. Leggett, Newboro.
Lennox	T. J. Winters, Newburg.
Prince Edward	Peter Collier, South Bay.
North Hastings	Jas. Haggerty, W. Huntingdon.
West Hastings	F. J. Knight, R.R. No. 6, Belleville.
Northumberland	Alex. Hume, Menie.
Peterboro	Geo. Gillespie, Peterboro.
Frontenac	Ed. Campbell, Hartington.
Victoria	Wm. Newman, Lorneville.

FINANCIAL STATEMENT FOR 1922.

Receipts		Expenditure	
By cash, members' fees	$142 00	Ottawa pay sheet for directors	$436 70
Government grant	2,500 00	Pay sheet No. 2, Kingston	78 70
Receipts from Dairy Exhibit	2,759 18	Prosecutor's expenses 1921, unpaid	15 00
	$5,401 18	Lecturers' expenses	326 65
Overdraft Molsons Bank	1,254 06	Advertising and printing	271 49
	$6,655 24	Rural publishing and subscriptions to "Farm and Dairy"	29 70
		District meeting expenses	144 75
		Officers' stationery, postage, telephone and express	88 38
		Officers' salaries	600 00
		Official stenographer	90 00
		Dairy exhibit expenses	4,058 54
		Debit to Molsons Bank last audit.	455 56
		War tax, Molsons Bank	3 74
		Interest, Molsons Bank	56 03
			$6,655 24

DAIRYMEN'S ASSOCIATION OF EASTERN ONTARIO 1922

The Forty-Sixth Annual Convention was held in Belleville on Wednesday and Thursday, January 3rd and 4th, 1923.

Mr. M. M. Empey, Napanee, the President, occupied the chair, and delivered a very fine address, stressing particularly the need of improvement in quality of our dairy products. He expressed satisfaction with the results of a season's experience with the enforcement of the Dairy Standards Act, and spoke encouragingly of the prospect of selling dairy products on a quality basis, and also of the marketing of dairy products through co-operative agencies. Among the difficult problems facing the dairymen for solution is the problem of the small, poorly equipped, and insufficiently manned cheese factory in Eastern Ontario.

Mr. G. W. Muir, of the Animal Husbandry Division of the Experimental Farms, Ottawa, spoke of experiments with the feeding of beet pulp to dairy cows and comparative values of corn versus sunflower ensilage for feeding dairy cows. Experiments show that it does not pay to feed valuable milk and other concentrates to calves of the dairy breeds.

Result of a Dairy Calf Feeding Experiment shows that farmers would be well advised to dispose of their surplus calves at birth rather than to attempt to make profitable veal calves out of them by feeding valuable milk and other concentrates. Mr. Muir also stressed the point of the necessity of providing in the dairy cow's ration sufficient mineral matter as a preventative of sterility and abortion.

Information on these subjects can be secured by writing the Publications Branch, Department of Agriculture, Ottawa.

G. H. Barr and Joseph Burgess gave a demonstration of cheese grading by exhibiting to the members cheese of various qualities and grades.

Mr. Barr spoke of the need of the dairymen unitedly getting behind the grading of dairy products with a view to competing successfully with competitors in the British market. A good lively discussion followed, in which Mr. Burgess very lucidly demonstrated the various types and grades of cheese.

James Alexander, cheese exporter, of Montreal, spoke of his thirty years' experience in the export cheese business, and referred to the superiority of Canadian cheese over New Zealand. He, however, warned of the future competition from New Zealand. He stated that only 2% of Belleville cheese was of second grade quality. He thought the Government should legislate against the shipping of cheese before they are fifteen days old.

At the evening session, Mayor Charles Hanna gave an address of welcome.

Miss Helen Campbell, Dairy and Cold Storage Branch, Ottawa, gave a splendid address on The Federal Milk Utilization Service. Copies of the address may be had by writing to the Dairy Division of the Department of Agriculture, Ottawa.

ADDRESS

Hon. Manning W. Doherty, Minister of Agriculture

Among other things the speaker said: The dairy farmer of this country has fared as well as the farmer in any other branch of agriculture. Let me also go one step farther and say, speaking of the farmers as a whole in this Dominion, that though they may not be satisfied with the returns which have come to them from this year's labour, the farmers of Canada to-day stand at the completion of the year in a better position to my mind than the farmers of almost any other country in the world.

I wish to pay tribute to the spirit which has been shown by them in this year of trial. I was fearful during the early part of the year, when the prices of farm products crashed on all sides, although the price of other products did not crash to the same extent, that the farmers would become panicky, and I was fearful that they would dispose of their live stock, but such has not been the result to any extent.

As to the outstanding events of the dairy industry during the year, I want to mention just two or three of them, and I probably cannot help saying just a few words about that pug-nosed Dairy Standards Act. I cannot claim to be the father of this child, but since I have to accept responsibility of having provided him with teeth, I should at least make some reference to just how he has behaved through the year and the chances for his future behaviour. Although he has had a fairly stormy passage, he has come through not too badly, and, unless I am misinformed—and I think I am not—in the not distant future, the dairymen of the Province of Ontario are going to look back and wonder how it was that for so many years they allowed those who had charge of the dairy instruction of this province and those who were responsible for dairy education in this province to go here and there and up and down the highways and byways preaching quality in all products that were being produced, and at the same time maintaining the standard of buying on an entirely different basis. Already good results have come from the enforcement of the Dairy Standards Act. You cannot, of course, expect any marked results in one year. This year, it took on an average 11.14 pounds of milk to produce a pound of cheese as compared with last year, when it took 11.27. That is not very much, but let me say to you, it is my opinion that before the expiration of two more years, the number of pounds of milk to make a pound of cheese will have been reduced considerably, and it will ultimately mean a good many million dollars to the farmers of the province.

Let me say also that it is my opinion the Dairy Standards Act could not have been brought in at a more opportune time. There are those who say the time was not opportune, and that it should be brought in when prices are up and when you can sell the product without paying particular attention to the quality. In my opinion, it is the very opposite of that. At the present time, it is possible for any dairy farmer to weed out the low-class producing members of his herd with less loss than at any other time in the last many years, and if this country is to compete with other countries in the world's market, we must get down to economic production. You and I are aware that a year and a half or two years ago, the fat content of the milk of a large number of cows of this province had gotten down to a ridiculously low figure. It is necessary for the economic production of butter and cheese that these low-fat producing cows be weeded out from the herds and replaced by higher producing cows.

Mr. Doherty made an appeal for uniformly high grade products, if Canada is to compete in the markets of the world.

Mr. Doherty also referred to the awards taken by Ontario cheese at the Dairy Show held in London, England, and stated that it was the duty of the Government to advertise our products in th buying markets of the world.

As to the future of the dairy industry, it depends, as far as prosperity and development are concerned, upon the same fundamental factor as any other industry in the country depends. There are two great outstanding fundamental principles which must at all times be observed in order that any industry shall make progress and bring prosperity; one is that we shall have economic manufacture of high quality products, and the second is that we shall have an efficient and effective marketing system. With regard to the economic manufacture, let me say that this is largely a matter of science and experimentation.

After a reference to the splendidly equipped new Dairy School buildings at Guelph and Kingston, the Hon. Mr. Doherty stated that he had the greatest faith in the dairy industry of the province. "Knowing the dairy industry of this province is only in its infancy, I was bound to give it the best instruction that could possibly be given. I am confident that there is no country on earth that can produce a higher grade of dairy products than we can. I have had

Name of Instructor	No. of factories in group.	Total No. of visits made to factories	No. of factories where instructors did testing.	No. of patrons	No. of samples tested	Average % of fat in all tests made	No. of factories paying by fat plus 2 method	No. of factories that did not pasteurize whey regularly	No. of factories making whey butter
Bensley, G. H.	18	305	18	1,160	4,323	3.51	2	4	.....
Bailey, W. H.	25	437	25	694	4,164	3.41	16	14	10
Brennan, Chas.	24	327	23	1,058	6,699	3.44	3	5	6
Buro, J.	25	425	20	740	6,012	3.60	11	6	3
Brown, Freeman	29	320	24	1,071	6,351	3.45	3	10	12
Clark, Fred	27	237	27	718	4,265	3.60	2	2	1
Cheetham, S. S.	32	256	29	822	5,321	3.34	16	20	18
Dool, Fred	26	287	24	779	4,101	3.50	3	6	3
Echlin, J. H.	28	283	29	876	5,006	3.54	2	1	17
Howey, Hugh	21	353	20	952	4,153	3.44	10	6	1
King, Jas. F.	21	630	21	732	5,039	3.70	5	21	1
Linn, C. F.	23	320	22	893	4,470	3.34	14	20	7
Murray, J. A.	26	347	25	875	4,215	3.18	7	21	6
McMillan, G. A.	22	444	20	657	5,583	3.50	14	8	2
McAllister, Jos.	22	327	22	659	3,762	3.80	.....	.....	1
McAllister, Ed.	22	315	22	705	4,580	3.56	.....	1	.....
McKinley, H. A.	23	356	20	689	4,567	6.61	.....	10	4
Mitchell, Jas.	28	256	26	859	4,295	3.48	9	2	9
Nolan, Peter	32	326	32	847	5,929	3.35	12	1	17
Norval, C. W.	32	464	32	776	6,695	3.51	4	2	31
Olmstead, W. H.	22	330	22	567	3,985	3.60	.....	.....	1
Rogers, E. T.	24	478	24	625	5,039	3.74	1	13	.....
Rancier, Gilbert	21	506	21	590	4,850	3.67	2	11	.....
Sandwith, H. B.	27	323	26	635	3,800	3.34	4	2	1
Trickey, M. O.	23	587	23	780	6,350	3.50	2	4	10
Whattam, T. E.	20	280	17	1,500	6,343	3.50	6	.....	14
Wright, G. F.	29	265	29	812	5,042	3.46	1	.....	11
Wright, W. O.	23	625	20	605	4,683	3.65	9	2	.....
Ward, R. W.	28	598	8	1,092	1,672	3.36	6	4	12
Legault, A.	16	179	11	310	544	3.86	1	5	.....
	739	11,286	682	24,078	141,838	3.51	165	195	196

it put to me time and again that New Zealand can do this and she can do that. I have not had an opportunity of visiting New Zealand, but I know that while they have an advantageous climate, their advantages are offset by disadvantages. Their land is worth $250 an acre, and ours sells for much less, and we have advantages that are fully compensating." He concluded by outlining somewhat fully his views as to the needs in efficient marketing of our dairy products.

ANNUAL REPORT OF DAIRY INSTRUCTOR AND SANITARY INSPECTOR FOR EASTERN ONTARIO FOR 1922

G. G. Publow, Kingston

The year just closed has been perhaps of more than the average interest, owing to the fact that we were all working under new conditions made necessary in the fulfilment of the requirements of the Dairy Standards Act, put into force for the first time.

A year ago, when these new regulations were being considered, we were in a position of more or less doubt as to what their outcome would be in the

No. of factories that skim whey and ship whey cream	No. lb. milk delivered to cheese factories from May 1st to Nov. 1st	No. lb. cheese made from May 1st to Nov. 1st	Average lb. milk to make a lb. of cheese	No. of factories with cool curing rooms	No. of factories that made improvement in building or plant	Estimated expenditure of same	No. of new silos built
13	27,543,558	2,476,957	11.01	2	11	11,600	10
13	22,349,030	1,976,776	11.30	2	21	4,880	6
12	31,740,583	2,799,864	11.30	4	24	4,223	16
5	22,202,247	2,048,134	10.83	1	21	6,000	25
9	23,903,879	2,161,289	11.06	4	20	4,875	15
12	21,507,581	1,937,111	11.10	.....	13	2,000	5
11	41,058,900	3,549,846	11.56	1	29	11,000	9
15	23,437,106	2,079,994	11.26	2	1	600	9
1	23,675,173	2,118,684	11.12	.....	18	2,790	8
20	27,761,021	2,401,907	11.55	8	16	8,797	17
4	22,858,705	2,085,856	10.96	1	.....	2,300	9
11	34,763,917	3,020,375	11.40	2	20	8,900	10
18	29,749,500	2,564,344	11.50	5	26	5,000	10
8	24,830,685	2,220,028	11.18	.....	22	2,560	27
1	15,165,956	1,465,207	10.35	.....	18	3,147	12
3	21,134,060	1,923,675	10.98	.....	6	2,840	7
4	25,599,409	2,461,754	10.40	.....	19	8,700	25
6	41,573,714	3,669,991	11.31	1	25	7,035	94
.....	32,908,593	2,952,891	11.14	1	20	2,500	9
.....	32,862,960	2,961,572	11.09	.....	19	2,510	72
4	17,502,170	1,632,503	10.72	.....	21	3,228	5
4	24,474,219	2,326,400	10.52	.....	16	2,200	10
3	20,656,800	1,930,038	10.70	.....	16	4,045	.....
6	20,362,463	1,802,137	11.29	.....	14	3,700	7
7	27,478,530	2,399,461	11.41	1	8	3,650	57
6	37,067,434	3,232,636	11.46	6	19	6,700	.....
2	34,290,432	2,996,550	11.47	.....	18	5,412	23
3	17,359,326	1,608,859	10.78	.....	8	1,500	8
12	24,639,447	2,177,984	11.31	10	26	10,192	7
.....	4,097,534	398,464	10.28	.....	5	400	.....
213	774,554,932	69,381,279	11.14	51	500	143,284	512

face of considerable opposition, but we have passed over our first season under the new Act and are to-day, I feel sure, of a much more united spirit than has existed for some time.

The new Dairy Standards Act, as you know, went into effect on January 1st. Associated with this, was the offer of the Minister of Agriculture to provide instructors to do the testing of the milk at the factories, at a cost of fifty cents per patron for the season. So many took advantage of the latter offer that our staff of instructors had to be increased and the groups made smaller, so that the milk testing could be finished sufficiently early each month to prevent delays in arranging factory payments.

Of the 739 factories in operation, 683 applied to have a Government man do the testing, so thirty instructors were appointed in addition to Mr. Barker, who was my assistant.

As was to be expected, there were many obstacles to be overcome in the first part of the season. New equipment had to be installed by the factories and, in many cases, alterations made that caused delays. However, before the season was very far advanced, almost every factory was working along smoothly, and as the patrons became more confident and convinced that the testing was being done fairly and efficiently, it was most agreeable to see how former opposition melted away. It was gratifying to find that a great many of the patrons who were formerly opposing the fat test, after seeing the testing done at their own factory, went away satisfied and convinced of its fairness.

The keeping of duplicate samples is, I believe, one of the best procedures we have, as it gives the patrons a feeling of security and insurance against unfair readings, accidents, or spoiled tests.

The yield of cheese this year has been greater in percentage to a value of over $110,000. This amount would, no doubt, more than pay for all the cost of extra equipment installed and the extra cost of the instructors.

I will now give you a few of the more important comparative facts and some of the conclusions which we may naturally draw therefrom.

There were 24,078 patrons, 2,589 less than last year.

There were 231,000 cows.

The average yield per cow was about 3,400 pounds for six months, ending November 1st.

The total production of milk was 774,554,932 pounds during this period.

The total yield of cheese was 69,381,279 pounds, nearly seven million pounds less than in 1921, a decrease of about 10%.

It averaged 11.14 pounds of milk to make a pound of cheese, as compared with 11.27 last season.

There were 490,537 pounds of whey butter made, valued at $159,463, and whey cream valued at $107,068 was shipped.

There were nine factories burned down; eight of these were rebuilt at a total cost of about $26,500.

For ten successive years it has been taking more and more milk to make each pound of cheese, so it is at least encouraging to have a turn for the better.

Some of the reasons for the greater yield of cheese are as follows:

1. The fat test was higher.
2. The milk was better cooled and cared for.
3. The adulteration of milk was eliminated through payment on butter-fat basis.

Some of the results worth noting, which resulted directly from the testing, were:

1. Many patrons learned that their herds of cows were not as good as they believed.
2. A great stimulus was given to the investigation of individual cow records.
3. A goodly number of low testing cows were disposed of.
4. Better equipment has been provided at many of the farms for caring for the milk.
5. A check has been put on practices such as taking off cream for breakfast and putting water from rinsed pails into the milk can.
6. A greatly revived interest amongst patrons to do all they can to insure a better general milk supply.

All these things are what we have been working for for years, and I believe it has all helped very materially in improving the quality of the cheese. At any rate, the quality was much better this year than last, and while we must admit the average climatic conditions were better, still the difference is more marked than the average weather conditions, covering a term of years, would warrant.

Probably our greatest difficulty during the year was the securing of proper pasteurization of the whey at the factories. There were a number of reasons for this. Many of the factories had not the proper equipment. In old wooden tanks it was almost impossible to destroy germ infection. In many factories the whey was not entirely drawn away each day and the remaining surplus served as a constant source of infection which cannot be properly overcome.

In some cases scarcity of fuel was an added difficulty, and during part of the year there was a scarcity of water.

However, where it was satisfactorily carried out, I know of no one thing that did more than pasteurization of the whey to assist in improving the quality of the cheese.

In the reports of cheese defects, which I secured each week from the Government cheese grader at Montreal, it was notable that the vast majority were defects in flavour, such as "rancid", "fruity", and "not clean", and "open texture" due to yeast infection.

These defects we have proved long ago to be due almost entirely to unclean conditions at the factory, especially in whey tanks and in improperly sterilized pipes and utensils with which the whey comes in contact. There is no way of getting rid of these defects except to have clean conditions at the factory, and where whey is returned in the milk cans, there is no other way of preventing them except by the proper pasteurization of the whey.

Another fact in connection with the reports of the Government cheese grader that impressed me very forcibly and which I would like in return to impress upon every patron, factory owner and cheesemaker, is the large number of instances in which a few cheese, representing one or more vats, have been culled out of an otherwise good lot, because they were of inferior quality, and in a few cases rather bad.

Surely everyone with any foresight must realize what a danger to the whole industry lurks in such a condition as this, and should be rigidly guarded against.

It requires no imagination to realize the bad effect upon a dealer, or even more important, the consumer, if a few bad cheese are hidden under the mask of some of good quality. The good ones are passed without criticism as a matter of course but a few unexpected bad ones create a far reaching impression.

This is one of the reasons why I have always been in favour of a system of grading or inspection of all cheese before it is exported. The importance of this is, to my mind, becoming greater every year, because the competition with other dairy countries is greater every year. I hope our dairymen will realize this fact to a greater degree; that they will soon get over the mistaken idea that their interest ceases when the cheese leave their factory, and that they will protect their industry and reputation by inaugurating a system that will insure only cheese of first quality going into competitive markets. When the cheese are graded they should be distinctly marked so that all possible misrepresentation to the final consumer will be eliminated.

There never was a time in the history of the dairy industry when there was a greater need of co-operation and boosting on the part of all concerned. This applies to both the manufacturing and selling of dairy products, and if such is properly carried on we need have no fear of the future.

In recalling some of our past seasons' difficulties there is one that seems deserving of special mention, as it is of vital importance in connection with the payment for the milk.

I refer to the preservative used in the sample bottles. In order for a preservative to be satisfactory it must dissolve quickly, and be of sufficient strength to destroy and prevent germ life. Some of the tablets on the market for this purpose are very hard, are slow to dissolve, and as a result a number of milk samples spoiled. It seems to me that factorymen would be well advised in the purchase of the necessary preservative to see that they have a guarantee of efficiency in both the above respects.

These are the principal points which, sifted out from our collection of facts and figures, seem to be of greatest importance, and I feel confident that if an honest effort is made by all concerned we may look forward to the future with every encouragement.

In the course of discussion, Mr. Publow stated some of the instructors reported that every time they went to factories where trouble existed, the makers said they were being paid the full price for their cheese, but that was not the case later on after the grading was introduced. We had as many as five different makers in one factory. There are far too many makers in factories that should not be making cheese at all; but if we refused to let them take charge of a factory, there would be a number of factories that would have to close down. It is unfortunate that it is so difficult to get bright young men to take up this work. The farmers go to the expense of producing the milk and bringing it to the factory, but the man they employ does not buy the milk, and there is where the trouble comes in. There are some men in factories that you would not trust with a good pair of horses, but you will let them make your cheese. You should see to it that the men you have in the factories are capable men. It is unfortunate that we have so many small factories and men of little experience owning factories. As far as we know, most of the people are satisfied, and think their returns are coming all right, but that state of affairs cannot continue for ever. I appeal to the dairymen to see that everything is done that can be done to maintain our reputation for making good cheese. If the reputation of Ontario cheese goes down the makers have got to take the responsibility. You are the manufacturers, and if you take in milk that you cannot make good cheese from, you will have to shoulder the responsibility. You should co-operate with the man who employs you and ask him to co-operate with you. You should encourage uniform methods of caring for the milk. Lack of uniformity in method of caring for the milk is one of our greatest

weaknesses. Every change in the weather affects the product that you receive. We must have a uniform high grade raw material in order to make the best cheese. I am sure that if we can only show clearly, the average farmer of this country, that certain undesirable results arise from certain things, he will co-operate with us.

ADDRESS

Mrs. Chas. McCowan, of Campbellford, was called upon to express her views regarding quality in dairy products, and stated that when visiting Women's Institutes throughout the provinces she found that the great fault with our cheese and butter lies in the farm home and the care that is taken of the milk. It is surprising in some homes to see the careless way in which milk is handled. It does not seem to make any difference what condition the utensils are in, as long as the cows are milked and the milk gets away to the factory. It has been said that since the Dairy Standards Act was put into force, 100 farmers in one locality have put in ice that never put it in before, they realized that they will get a better price for milk that is properly taken care of, and it becomes a question in dollars and cents and the milk will receive much better care. It has often been said that if you wish to control the world you must talk to the origin of that world, and it all comes back to the women. It is said the hand that rocks the cradle rules the world and I have often thought that the hand that rocks the cradle rules the quality of the butter and cheese that we make in Ontario. We know at the present time that the men on the farm have not the time, and inclination in some cases, to attend to milking utensils, and it falls upon the women to do that work; and it is surprising to see how few of them understand anything about the principles of the care of milk. Many times at Institute meetings, the question of the care of milk and milking utensils is brought up and discussed. One lady said to me, "I cannot make butter, it always has a bad flavour." I asked her how she took care of her milk. I found that she kept the cream too long, and she did not understand that a certain amount of starter should be put in the cream in the colder months. I saw this same woman a short time ago, and she told me her butter was now A-1. I would advise you that instead of bringing your lecturers to speak at meetings of this kind you should visit several of the Women's Institute meetings and start at the foundation, and then you will have a better quality of milk, because we cannot get away from co-operation between the men and the women. There is no problem in connection with farming in which women have not to co-operate.

J. A. Ruddick, Dairy and Cold Storage Commissioner, Ottawa, gave an address on "What is the Matter with the Canadian Dairy Industry." Copies of this address may be secured by writing to Mr. Ruddick.

SECRETARY'S REPORT FOR THE YEAR 1922

T. A. Thompson, Almonte

The Dairymen's Association of Eastern Ontario has passed another milestone, and although there have been many ups and downs in the industry during the past season, yet on viewing the entire situation we are pleased to be able to report progress in almost every branch of the great industry which we represent and endeavour to foster in the Eastern section of this province.

The make of cheese was much smaller than last year while that of butter was materially increased, due largely to the dissatisfaction of patrons of cheese factories with the provisions of the Dairy Standards Act. There were many factories in Eastern Ontario that lost a number of their patrons who skimmed their milk and sent their cream to the butter factories, which in many cases reverted to their financial loss, as the average price paid for butter fat at the cheese factories was greater than that paid by the creameries, and next year will see the majority of these patrons back to the cheese factories again.

An appeal was made to the dairymen to prevent the marketing of green cheese, to equip the cheese factories with proper curing rooms, and to encourage home consumption of cheese.

It is quite apparent to any man who figures the cost of production that the dairymen are not receiving an adequate return for their labour, and much dissatisfaction prevails at the present time over the great fluctuation in prices, particularly of cheese, during the past season, but we must bear in mind that there is no civilized country in the world that is not producing dairy products to some extent, and it is therefore futile to conceive of any one country controlling the world's markets.

There are many improvements that could be made all along the lines in our prevailing systems between the producer and the consumer. But we must be careful not to tear down that which has taken long years of labour to build up. Progress is always hard and slow, destruction easy and swift.

While we must always welcome any movement that will better our conditions we must also bear in mind that the dairy industry, like the rest of the world, wants evolution not revolution.

The dairymen of Eastern Ontario wish to express their gratitude to the Hon. W. R. Motherwell, Dominion Minister of Agriculture, for his efforts during last session of Parliament to prevent the manufacture, importation and sale of oleomargarine in Canada, and although his efforts were not crowned with success the dairymen feel that they have in the Minister a staunch friend and champion of their interests.

We also wish to express our appreciation of the assistance received from the Department of Agriculture of this province presided over by the Hon. Manning Doherty. During the past year a dairy meeting has been held in each of the eighteen divisions. These meetings have been well attended and much useful information has thereby been disseminated.

The dairymen appreciate very much the valuable work being done by Mr. G. G. Publow, Chief Dairy Instructor of Eastern Ontario, and also by Mr. L. A. Zufelt, Principal of the Eastern Dairy School. These men have been untiring in their efforts to place the dairy industry of Eastern Ontario upon a higher level.

I wish to thank the President and Board of Directors for their kindness and forbearance and for the assistance they rendered me in the discharge of my duties.

ADDRESS

HON. DUNCAN MARSHALL, AGRICULTURAL COMMISSIONER, OTTAWA

I recognize that the last two years have not been very successful years in any line of farming in any part of Canada, and what has been true here has been true in every country in the world. We had a very quick drop from the

high prices which were obtained for a few years, and the farmers more than any other class of people have found it exceedingly difficult to adjust their affairs to the conditions as they have existed during the past two years.

I had the pleasure of being in the Old Country during the last few months and I found the farmers there in a similar condition to what they are here. The farmers who bought their land when prices were high find themselves now in some cases paying a higher land tax than they paid rental a few years ago, and the price of everything they have to market is exceedingly low compared with what they were a few years ago. The farmers are not alone in having to adjust their affairs and their business to new circumstances. I am sure that most business men and tradesmen all over the country are finding similar difficulties. There is just one thing about farming, and that is you cannot stop. Once you have begun you have got to keep going on, no matter what happens; and while we sometimes hear people say they are not going to sow crops if they cannot get better prices, we will find when the time comes around the farmer works just as hard, plants just as many acres of crop as he did the year before, and prays to the Lord that things will turn out all right. Agriculture has been the foundation industry in this country for a great many years and is bound to continue so, and the only philosophy that we should indulge in at the present time is, not whether or not we should go out of the business of farming but how we can best adjust our business to the circumstances that we now find facing us. Prices are low at the present time, and when prices are low for farm stock and other equipment it is a good time for the farmer to adjust himself, and it is a good time for the dairy farmer to thin out his herd and get rid of the stuff he has always been a little ashamed of having around his place. If he has a pure-bred herd he should keep only the very best. In a few years there will be an exceedingly keen demand for high-class cattle in this country, and the man who, at the present time, culls out his herd and who prepares for that day is the man who will receive compensation for the hard time he is going through at the present time.

At the present time, Great Britain is practically the only market that we have to supply. We have been temporarily shut out of the American market, not altogether closed out, but we have been partially closed out. The Britisher has the greatest appetite of any people in the world, but while he has the greatest appetite he also has the most discriminating appetite in the world. He has no objection to paying the price for the thing he wants to eat, provided he gets what he wants. The impression has been given by a number of speakers at this Convention that if you have something to market in Great Britain, the thing to do is to find out what the appetite of the Britisher demands and then give that to him. Do not undertake to educate him to eat the thing you have produced, because that will take more than a hundred years. Our best business now is to give him the thing he wants, and if you do that, he has no hesitation about paying a decent price for it. High-class farm products on the British market are never too plentiful, and there is always somebody willing, not only to pay the market price, but to pay a bonus if he can get the thing he wants.

Just at the present time some of our Canadian farm produce is not in very good repute on the British market, but I can say that is not true about cheese. Canadian cheese made a reputation for itself many years ago on the British market and it has been able to hold that reputation to a large extent. During the last few years New Zealand has made very good progress in improving her cheese so as to suit the British taste, and New Zealand has a reputation for producing the kind of butter the Britisher likes best, and in some cases has been

able to surpass Denmark in the production of high-class butter, and that has made New Zealand products of all kinds very popular in the British market. The result is that the merchant who is dealing in New Zealand butter is prejudiced in favour of New Zealand cheese; and so we find that Canadian cheese is suffering on the British market to-day because of the low quality of Canadian butter that is sold in Great Britain. If you get any one class of Canadian provisions on the British market that is not up to standard you prejudice, to some extent, every other Canadian product that goes on that market, because most of these things are handled by the same sort of dealers or the same men.

When the whole of Europe gets back to agricultural production, then we will come into a real kind of competition; and if Canadian goods then get a bad reputation on the British market, we will not be able to sell and the Canadian farmer will suffer as a result. For that reason, I believe that every honest effort that the Department of Agriculture can make to more or less standardize Canadian products and to have them graded as well as they can be graded for the export market, should be made. I was in Mr. Miller's place on Tooley Street a few weeks ago, when a customer called up and said, "I want 100 boxes of a certain brand of New Zealand butter, and I want 50 boxes of another brand," and he named the brand. Then the merchant said, "Won't you take some Canadian?" And the man on the other end said, "I would if I were in town, and had time to open every box; but I won't buy Canadian butter over the telephone." But he did buy New Zealand butter over the telephone. The Britisher has not only the most discriminating appetite, but he is the most discriminating buyer in the world, and he is about the keenest man in business of any class I know. No matter whether it be diplomacy or buying or selling, he does not consider whether the stuff comes from the Fiji Islands or whether it comes from any other place.

He will pay the highest price if it is first-class; and if Canadians are going to sell goods in the British market they will have to manufacture goods that will suit the British appetite.

After a strong appeal for efficient education along agricultural lines, the speaker continued: If there is one thing I want to do more than another it is to give men and women and boys and girls who live on the farm just a little inspiration about this business. I have men tell me who have gone into the dairy business that their boys would not milk cows. I went to one fellow's place and saw his cows, and I did not blame the boy. He was an intelligent boy, and would not milk that kind of cow. But I never saw a boy yet who had the right kind of spirit in him who would not milk a good cow, and who would not take a great deal of delight in milking a good cow. What is the most satisfactory thing about milking a good cow? Is it not in filling one pail so full that it won't hold a drop more, with the froth over the top, and have to set aside that pail and get another pail? If you get that kind of cow, your boy will be proud to milk it, and if you get him a set of scales to weigh the milk he will take a greater interest still, and will give that cow a pat on the flank when he is through milking, and give her a little extra bite so as to get a little more milk out of her the next time, and the old cow will respond. Set that same boy alongside an old rip of a cow that he has to pull at 30 minutes to get a quart and a half of milk as his reward, and when he gets through what kind of humour is he in? He will look at the milk, and he has to straighten his fingers out one at a time; and when he reaches for the milking stool, he has a great temptation to give the old cow a whop with it for luck. That kind of cow is usually a triple purpose cow. She is able not only to supply beef and milk, but speed, and she will often let loose

her hind legs and upset the pail and spill the little milk that she has given. Then the boy will reach for the fork and give her a prod. There is a war between the boy and the dairy business, and he will tell the old man he is going to leave the farm if he has to keep on milking. That is the kind of business that has been driving boys off the farm for the last twenty-five years. There is only one remedy for it, and that is to have more education and better ideas, not only about the dairy business but about every line of agriculture; and that will not only improve our boys and girls as farmers but as citizens of our country. We have in Canada millions of acres of land that is unproductive to-day that should be brought into production during the next ten or fifteen years. Nobody can calculate what the agricultural future of this country is; and whether it proceeds fast or slow, we must have contentment and happiness in the homes of the people who live on the land, and that can only be brought about by improved educational opportunities for the boys and girls of to-day who are going to be the farmers and farmers' wives of to-morrow. That is the biggest business that the Government has on their hands in Canada to-day and that is the thing that will lift agriculture out of the slough of despond which it is in at the present time. If this country is going to become great, it will only be by intelligence being applied to the cultivation of the soil and the production of all varieties of farm products. And when that is done, you will not be able to stop the rest of the country from flourishing. I am not saying that the farmer is the only man in the country. The business and professional men in every walk of life are as important as he is. But in a country like Canada where abundant wealth lies in the soil, the prosperity of the farmer means prosperity for every other business in the land.

NEEDS AND POSSIBILITIES OF ONTARIO DAIRYING

Geo. A. Putnam, B.S.A., Director of Dairying, Toronto

I wish to briefly summarize the situation surrounding the dairy industry in the province and outline some of the needs and possibilities as I see them.

May I ask what the farmers of Ontario would do without the dairy cow? Many of the dairy farmers are dissatisfied with their net returns, but in this period of readjustment we are agreed, I think, that there is nothing which presents greater possibilities for a continuous income on a profit-producing basis than dairying. Dairying has been the mainstay of Ontario agriculture for many years, and will continue to be the backbone of our greatest industry for years to come, provided you deal judiciously with the present situation and make and take advantage of the opportunities in the business of dairying.

The output of cheese has decreased about 9½ per cent. during the past year, while the output of creamery butter has increased about 16½ per cent.; and we have a total value for creamery butter in excess of that for cheese, for the first time in the history of Ontario dairying, the difference being $2,398,000.

Do not take it for granted that dairying in Ontario is on the decline simply because the volume of cheese has decreased. We are consuming much more milk as milk, and much more cream as cream, and we are utilizing milk in various ways besides making butter and cheese—for condensed milk, powdered milk, ice cream, etc.

So much for our yearly output of milk, cream and manufactured goods. How about the immense plant—in buildings, cattle and equipment—represented by the 104,500 patrons who furnish milk and cream to the cheese factories and creameries; also those who are supplying the raw material for the condenseries,

powder factories, ice-cream plants, city and town milk and cream supply, as well as the great quantities consumed on the farms? Who can estimate the millions represented in the farm lands, equipment, and cattle, to say nothing of the $17,500,000 invested in manufacturing plants?

How about the quality of the goods we are producing? There is no question that the general quality of the cheese produced during 1922 was above the average of any other season, due in no small measure to the introduction of the Dairy Standards Act. The extra care given the milk, and the pasteurization of the whey, were important factors in improving the quality of the cheese. The favourable weather throughout the greater part of the year in part accounted for the improved product. A small percentage of the butter produced in the province is of higher quality than in previous years. The general quality has not, however, improved, and it would appear an impossible task to effect a general improvement until a method of improving the quality of the raw material has been successfully introduced. The manufacturing methods and workmanship in nearly all the creameries and a majority of the cheese factories are of a high standard, and it is quite apparent, therefore, that we must look largely to the raw material for improvement in the quality of the finished product.

As an evidence of the developments in the home market, I secured the samples of cheese in the exhibit before you, as offered for sale in one of the retail stores in Toronto:—

List of Samples in Exhibit

	Quantity Purchased Ounces	Cost	Price per pound
CANADIAN			
Triangle Cream Cheese	4	$0.20	$0.80
McLaren's Limburger	16	.48	.48
Cream Pimento	.....	.20	.....
Ingersoll Cheese	8	.25	.50
McLaren's Jar	16	.60	.60
" Brick	13½	.32	.38
" Kraft Swiss	16 6/7	.58	.55
" Kraft Pimento	17 1/10	.47	.44
Mild Canadian Cheddar	20	.50	.40
Medium "	12 1/3	.27	.35
Old "	13 6/7	.39	.45
Canadian Kraft	16	.45	.45
" Old Stilton	24 6/7	.70	.45
IMPORTED			
Limburger	16	.60	.60
Camembert, Portions	16	.65	.65
" Twin	16	.60	.60
Gruyère, Solid	16	.55	.55
" Portions	16	.70	.70
Edam, Cake	16	.75	.75
Pineapple	10	.75	1.20
Neufchatel	2	.10	.80
English Cheddar (Old)	15	.38	.40
" (New)	15	.30	.32
Gorgonzola	18½	.80	.70
Swiss	18½	.80	.70
Edam	10¼	.45	.70
Royal Crown (Loaf)	14½	.40	.44
" (Pimento)	16	.44	.44
Roquefort	16	.70	.70
Roman	15	.47	.50
English Stilton	16	.80	.80
" Cheddar	16	.90	.90
Domestic Swiss	21¾	.68	.50

It would appear that the problem of marketing Ontario cheese consists of something besides collecting cheese at some central point and offering it for sale, to be passed on to the consuming public without any thought of merchandising or placing the industry upon a permanent business basis. Are the producers of milk in Ontario to allow Canadian cheese, although of known high quality, to be crowded off the British market because of lack of grading and proper merchandising, and are the producers to sit calmly by and see twenty varieties of imported cheese, most of it inferior in food value and flavour, but quoted at a higher price, sold in competition with Ontario cheese without making any effort to inform the public as to the superiority of the Canadian product?

The exhibit presented is really not so alarming as it at first appears, for I do not think the quantity of imported cheese sold has grown to any proportions. The situation demands action by the producers. Governments can help, but do not leave too much to the Government or to the trade.

Surely a survey of the annual output, the money invested, the quality of our goods and the marketing situation will impress us sufficiently to induce a very careful consideration of the needs and possibilities of Ontario dairying—or should I say "Canadian dairying"?—for in 1921 the output of Ontario's dairy factories was about $4,000,000 more than in all the rest of the Dominion.

The three outstanding needs in Ontario dairying are:

First, quality.
Second, an efficient marketing system.
Third, selection and care of the dairy herd.

Quality Improvement

The great need in Ontario dairying is the production of high quality cheese and butter and all efforts towards improvement will be of little avail until the producers appreciate the importance of furnishing uniform high grade raw material. We will not get improvement if 90 per cent. or 95 per cent., or 99 per cent. of the cream in the individual churning, or the milk in one vat, is of first-class quality and the balance inferior. The measure of quality in the finished product must be based upon the quality of the poorest raw material used in the lot manufactured. A great deal has been said about the care of milk and the care of cream. What we want now is united action on the part of all interested parties in putting on a "better quality" campaign, and in any campaign for the improvement of the raw material we should secure the co-operation and support of the women folk on the farm.

Let us get together and formulate plans for an aggressive campaign in the hope that the manufacturing interests will see to it that the extra effort in the care of milk, and outlay in equipment will be rewarded by payment for the raw material on a quality basis. It is impossible to make a high grade flour out of poor wheat, and you cannot make the finest cloth out of an inferior yarn. Likewise you canot make clean-flavoured high quality butter and cheese out of inferior milk or cream.

Marketing

Since spasmodic and somewhat effective efforts have been made in years gone by to induce the dairy farmers and manufacturers to produce high quality goods, lack of efficient marketing has been a continuous handicap. Unless we introduce a system whereby a definite standard will be fixed and the product

will be paid for on a quality basis, I see little hope for rapid or permanent improvement. The marketing proposition is not a problem which can be solved by government action, although governments should be and are prepared to give advice and assistance to the producers in their efforts to place the marketing of their goods upon a business basis. There is no problem of such importance before the farmers of this continent as that of the proper merchandising of their goods; and the broadminded business men of our country, financiers, tradesmen, and manufacturers are coming to appreciate the fact that permanent national prosperity rests in the efficient organization of agriculture, not for production only, but also for efficient marketing. It is a matter of national concern. Agriculture does not need artificial bolstering, but rather the introduction of business principles all along the line.

Would it not be well for the producers of cheese to study the market situation, since the methods which have been followed may result in high quality Ontario cheese not only losing ground on the export market, but also being crowded off our own market to a considerable extent, if the producers continue to be satisfied with the present methods of marketing.

Our producers and makers should consider very carefully the problem of putting Canadian cheese on the market in a variety of packages, and possibly manufacturing some additional varieties.

In the state of Wisconsin they are manufacturing a greater variety than we are here, and are putting their cheddar cheese up in a variety of forms, catering to the desires of the trade and the consuming public. If we do not, through the co-operation of all concerned, continue to improve and stabilize our cheese, and look to the marketing of it upon a proper basis, then great quantities of milk now utilized for cheesemaking will have to be diverted to other branches of the business, which will weaken the whole dairy industry of the country. One of the first essentials in successful marketing is a system of grading whereby our cheese will not lose its identity, but will be known as Canadian cheese of well defined grades both in the merchant's hands and on the consumer's table. An effective grading system must insure returns to the producers upon the basis of the quality of the raw material furnished.

We are paying 35, 40, and 45 cents per pound in the city of Toronto for cheddar cheese, the higher price being for cheese only a few months old. What did the producers receive for that cheese? You should see to it in your system of merchandising that the producer is receiving his just proportion of the price paid by the consumer. Surely an increase of 50, 75, and 100, and even 125 per cent., as between the prices paid to the producer and the price received by the retailer is altogether out of proportion.

I do not believe the dairy farmers of Ontario, in possession of all facts as to the present situation surrounding their own industry, and knowledge as to what has been accomplished through co-operative effort based upon recognized underlying principles and proper methods, will be longer content to see such an important industry inefficiently organized for handling, manufacturing and marketing purposes.

Herd Improvement

Herd improvement and care is entitled to lengthy consideration. My intention at this time is to make a few observations and an appeal.

Can you call the large number of men who are receiving yearly returns of less than $310 ($308.75 average) from their herds, dairy farmers? They are simply "keepers of cows." The average of the cheese factory herds in Eastern

Ontario is 9½ cows, and the average income last year was $495, say, $600, when we allow for milk and cream consumed at home or made into dairy butter. Does $63 per cow satisfy the farmers of Ontario? It does not satisfy many, for we know that the returns per cow in many herds is more than double this figure. What then must be the output of the herds that pull down the average? When will the farmers generally recognize the importance of knowing what the individual cow is producing or is capable of producing? When will they realize that quality is of as much importance as quantity?

United Effort

With the resources in herds, farm equipment, manufacturing plants, capable makers, and the readiness of the Government to make its dairy schools and field men of increasing worth to the dairy industry, it is surely the duty of the dairy farmers of Ontario to get together and study their own business from the first steps in production to the finished product on the consumers' table. The need for effective action on the part of the producers of milk and cream was never so great as at the present time, and the possibilities for placing the dairy industry of Ontario in a commanding position, both in the foreign and domestic market, are well within the reach of the tillers of the soil. All that is needed is a get-together determination. Recent events would indicate that the farmers are warming up to the question of marketing as well as production, and I bespeak most aggressive and very effective action in the near future. The very salvation of Ontario dairying, if not Ontario agriculture, depends upon the results of united action on the part of Ontario's dairy farmers. The eyes of other farmers are upon you, and your success will mean encouragement for those pursuing other lines, to follow your example in efficient, effective organization.

DAIRYMEN'S ASSOCIATION OF WESTERN ONTARIO

OFFICERS FOR 1923.

President—R. JOHNSTON, Princeton.
First Vice-President—H. MANNEL, Woodstock.
Second Vice-President—F. A. KEYES, Elmira.
Third Vice-President—FRANK THOMPSON, Embro.
Secretary-Treasurer—FRANK HERNS, London.

Directors.

THOS. BALLANTYNE, Stratford.
G. BAIN, Lakeside.
JAS. NEWBIGGING, Listowel.
W. G. MEDD, Exeter.
H. YORKS, Harrietsville.
A. E. GRACEY, Simcoe.

Representatives.

Western Fair—F. HERNS, London; FRANK BOYES, Dorchester.
Canadian National—F. HERNS, London.

Auditors.

E. H. NELLES, London.
J. C. HEGLER, Ingersoll.

FINANCIAL STATEMENT FOR 1922.

RECEIPTS.

Cash on hand from previous year	$ 63 81
Legislative Grant	2,000 00
Members' Fees, $260.00, less $27.00 credited to 1921 statement	233 00
Donation	100 00
Sale of Dairy Exhibits	1,669 12
Advertising in Convention programme	339 00
Sale of cheese used in Scoring Competition	16 00
Total	$4,420 93

EXPENDITURE.

Cash paid for prizes, cheese and butter, $448.00; Dairy School, $15.00; Cheese and Butter Scoring Competition, $30.00	$ 493 00
Expenses for Convention	218 29
Stenographer's Salary, $624.00; Directors' Expenses, $161.30	785 30
Postage and Stationery, $112.48; Printing, $281.57; Advertising, $74.16	468 21
Judges' Fees and Expenses, $63.85; Lecturers' Expenses, $14.10	77 95
Periodicals for members	50 85
Cost of Reporting	35 00
Purchase of Dairy Exhibits	1,674 84
Office Rent, $216.00; Office Furniture, $8.00	224 00
Office Expenses, light, cleaning and sundries	95 83
Telegram and Telephone	82 08
Express and Cold Storage Charges	21 53
Auditors' Fees and Expenses	15 00
Interest on Bank overdraft	6 29
Purchase of cheese for 1923 Scoring Competition	20 45
Total	$4,268 62
Balance	152 31
	$4,420 93

DAIRYMEN'S ASSOCIATION OF WESTERN ONTARIO 1922

OPENING OF DAIRY BUILDING.

On the evening of Tuesday, January 9, preceding the business sessions of the Association, a public meeting was held in the auditorium of the new dairy building, O.A.C., Guelph, which was formally opened and dedicated by Hon. Manning Doherty, Minister of Agriculture for Ontario.

J. L. ALLEN, Dunnville, president of the Dairymen's Association, presided, and in addition to that of the Minister, addresses were delivered by Prof. H. H. Dean, head of the dairy department; J. B. Reynolds, principal of the O.A.C.; J. A. Ruddick, dairy and cold storage commissioner for Canada; William Newman, president Eastern Ontario Dairymen's Association; H. S. Johnston, president Ontario Creamerymen's Association, and also by three former dairy school instructors, Mrs. Laura Rose Stephen, Mr. Mark Sprague and Mr. J. A. McFeeters.

ANNUAL CONVENTION.

The Convention of the Dairymen's Association of Western Ontario opened on Wednesday morning, January 10th, at 9.45, in the Dairy Building.

PRESIDENT'S ADDRESS.

MR. JAS. N. ALLAN, Dunnville, Ont., President, expressed appreciation on behalf of the Dairymen's Association of Western Ontario for the efforts of the Minister of Agriculture of Ontario in obtaining the necessary appropriation for the erection of the new Dairy School, the co-operation of the President of the College, and the extensive study and experience of the Professor of Dairy Husbandry, H. H. Dean, which he has placed in concrete form in this magnificent building.

We recognize with favour the advancement being made toward the standardization of dairy products. We feel this to be especially necessary in that it will improve the quality of our products for export. This improvement seems timely in respect to creamery butter.

The increase in the receipts of creamery butter at Montreal of 168,733 boxes up to November 30th, 1922, over the same period in 1921, coupled with the fact that approximately 17,000,000 pounds of butter was exported from Canada up to November 30th last year, indicates that the status of the butter industry in Canada is changing from one almost entirely of production for home consumption to an exporting industry as well.

Present trade relations with the United States, formerly a fairly important customer for cream and butter, have made Great Britain our principal outlet for any surplus. Considerable of this business with the Mother Country in the early summer was profitable for producer, manufacturer and dealer. Our

concern should be that this butter shall be of sufficiently high grade to compete with butter of other countries on that market.

I wish to mention in this regard the desirability of our butter manufacturers in Ontario placing more emphasis on the quality of the product and less on the quantity of the output. Our zealous creamery operators throughout the Province have made it difficult for other operators to insist that the raw product be well cared for, which care we all recognize to be the basis of a good dairy product.

It is a matter of regret to note the decrease in the amount of cheese received at Montreal last year, which was about 344,826 boxes less than for the same period in 1921. This condition was no doubt partly due to milk being diverted to other channels, owing to the low price of cheese at the beginning of last season. The high price of cheese during the last few months has demonstrated the advisability of staying with an industry during periods of depression if we are to benefit from periods of good prices. The cheese industry is probably the branch of our dairy industry of which we may feel most proud. We shall be glad indeed when our butter commands the respect of the British tradesman that is enjoyed by our cheese at the present time.

The condensed and powdered milk trades have experienced more satisfactory conditions during the past year than in 1921. This improvement has been reflected in higher prices paid the farmers. Producers selling to the city milk trade have found a good market for their product at a satisfactory price.

I am indeed proud to say, as it is always possible to say at this Convention of the Dairymen of Western Ontario, although they have had their difficult periods, they have met them with courage and have increased their production from time to time, often under difficult circumstances, and now as always face the future with the utmost confidence.

DIRECTORS' REPORT, 1922.

The year just closed has from many standpoints been encouraging to those engaged in the dairy industry. Summer pastures were excellent in most sections and good crops, especially corn, means plenty of feed for wintering stock. Consumption of dairy products is increasing and the statistical position of butter and cheese is in favour of price maintenance. The condition of the milk and cream and the finished products was not affected to the same extent as last season by extremes of temperature.

Cheese and Butter Prices. Higher butter prices compared with cheese in the early part of the season diverted some milk from the cheese factories to the creameries. However cheese prices recovered later and the season closed with a short "make." The surplus butter output was exported, thus assisting to maintain a fairly uniform home market price. Less fluctuation in the exchange rate was also a factor in stabilizing the market. As mentioned in previous reports, a reviving export butter trade is necessary to dispose of our surplus and this trade must be developed on a quality basis if we are to compete on equal terms with other countries in the export market. The production of dairy products has proven to be one of our most stable and profitable branches of agriculture.

Milk Markets. In 1921 Western Ontario produced 19,512,675 pounds of cheese; 33,329,781 pounds of creamery butter, and 200,910,168 pounds of milk

was utilized in the condensed, powdered milk and market milk industries. The total value of these dairy products was $20,079,528.67. The demand upon the cheese factories for market milk during the late fall months was much greater than last season and therefore the normal output of fall cheese was not maintained to the same extent to the end of the year. A number of cheese factories and most of the creameries will operate during the winter.

The whey cream market across the border was practically closed the latter part of September, and this cream had to be handled in the local factories. A large cream-buying station operating at the border withdrew from the Canadian field.

The markets for condensed and powdered milk are improving.

Fall Exhibitions. Our cheese and butter makers are to be congratulated upon the large number of prizes won at these exhibitions. The quality and uniformity of these exhibits indicates that persistent dairy instruction, inspection and grading is resulting in steady improvement.

The Dairy Branch conducted a Dairy Educational Booth at the Canadian National, The Western, and Royal Exhibitions, giving special attention to emphasizing the importance of increased consumption of dairy products as health foods.

Exhibits and propaganda of this kind are valuable illustrations of the importance of placing dairy products attractively before the public and are of real educational value.

Legislation. The Dairy Standards Act which came into force last year has on the whole been well received by the trade. The Dairy Branch of the Department of Agriculture drafted regulations and issued full instructions to assist in carrying out the provisions of the Act.

The Milk and Cream Purchase Act has been the means of bringing about more uniform and correct methods in testing milk and cream. The regulations under the Act now conform with the Dairy Standards Act. Your hearty co-operation in connection with the administration of these Acts is solicited.

The Dairy Exhibition. This Exhibition held each year in connection with this Convention is educational in a practical way. In view of the fact that the Federal Government proposes to grade all dairy products for export, beginning in April of this year, it becomes very important that cheese makers and butter makers should have a knowledge of the standard grades; and for this reason an interesting feature will be the Cheese and Butter Scoring Competition.

Cow Testing. The Dairy Standards Act has shown that cow testing should be one of the outstanding voluntary efforts of the producers to improve the general productive standards of Ontario herds. A vigorous Federal and Provincial policy in this connection should be the means, if the producers will co-operate, of lowering the cost of milk production and increasing the net profits per cow.

Board Meetings. Your Directors have endeavoured to carry on the business of the Association to the best of their ability and wish to express appreciation of the excellent work done by the Federal and Provincial Departments of Agriculture and the Provincial Dairy Schools in connection with the dairy industry. There are now two up-to-date dairy buildings in the Province fully equipped with the latest and best machinery, and with this stimulating influence we ought to have the very best highly trained men available for the important technical positions in the manufacturing of dairy products.

Membership. The Association has a membership of 260 for 1922.

General. Indications point to a struggle for desirable markets for our surplus dairy products and these can only be held on a basis of quality and we must therefore continue as in the past to work for high grade products. The production and manufacture of dairy products is a specialized technical branch of agriculture and each year brings up new problems. We must avail ourselves of every assistance which science and good practice may offer to improve our methods and to produce only first grade goods. The export trade will absorb our surplus of No. 1 products, but the consuming public cannot be expected to take our second grade at a profit; and in the last analysis, producers and manufacturers will find that they are working under conditions where quality will always count in the world's market to a greater extent than ever before. It is, therefore, submitted that the payment for milk and cream on a quality basis is of equal importance to payment for the finished products on a graded basis. The payment for cream by grade is our next big problem. Let us hope that the basic principle of quality improvement may be recognized by producers as well as manufacturers. We as dairymen must in future take a more broad gauge view of these basic facts and to a greater extent look upon the dairy industry from a national standpoint, forget some of our personal difficulties, eliminate unfair competition, and continue to work for the benefit of the industry as a whole.

REPORT OF CHIEF DAIRY INSTRUCTOR AND SANITARY INSPECTOR, WESTERN ONTARIO, 1922.

F. Herns, London.

Progress in dairy methods involves many factors, and it becomes each year a more complex problem to deal with the many technical requirements in maintaining the general standard of quality of our dairy products and insuring the satisfactory general conditions of the factories and surroundings.

New men are continually replacing many of our most experienced operators who take up other lines of work, sometimes through lack of appreciation of their services by the patrons of the factories by whom they are employed. This means constant repetition in technical training of new types of men. Many such men become efficient while others do not.

The Cheese Industry.

Factories. One hundred and sixteen factories, 5 of which made butter and 11 other milk products, such as milk powder, casein, shipping milk, etc., received 447 full day and 344 call visits by the four cheese instructors. Five cheese factories, closed in 1921, were re-opened for cheese making, and one factory closed.

Milk Supply. Seven thousand one hundred and twenty-six producers supplied milk to the factories. The estimated average per cent. of fat in milk for the season is 3.41 per cent., as compared with 3.34 per cent. in 1921. The average estimated loss of fat in the whey for the season was .221 per cent.

Quantity of Cheese, 1921. Nineteen million five hundred and twelve thousand and six hundred and seventy-five pounds of cheese were produced in Western Ontario in 1921, an increase of 6,357,058 pounds over 1920. The average number of pounds of milk required to make a pound of cheese was 11.34 as compared with 11.4 in 1920. The average price per pound of cheese was

$0.182 as compared with $0.267 in 1920. One hundred and sixty million, nine hundred and seventy-four thousand and seven hundred and eighty-nine pounds of milk was utilized in manufacturing condensed and powdered milk, and 39,935,370 pounds of milk was handled for market milk purposes by the milk shipping plants. Seventy-seven thousand nine hundred and eighteen pounds of whey butter was manufactured and whey cream sold to the value of $67,612.51. The total value of dairy products for Western Ontario for 1921 was $20,079,528.67 compared with $27,166,811 for 1920.

Quality of Cheese. The past season was, owing chiefly to the cool season and a better milk supply, less difficult to manufacture a fine quality of cheese than the previous year. The standard of quality was well maintained, although several factories developed the usual warm weather difficulties, but these conditions were remedied as quickly as possible and the percentage of defective cheese was small. Few acidy cheese were reported and the fall output was of very fine quality. Practically no yeasty or fruity flavoured cheese were reported, which indicates that the proper pasteurization of the whey is the best practical preventive of this defect.

Lactometer Tests. One thousand three hundred and five lactometer tests were made as compared with 18,576 in 1921. The reason for the less number of these tests is that the uniform payment of milk by test almost eliminated deteriorated milk. Six hundred and fourteen sediment tests were made and 47 patrons were visited in connection with off-flavoured milk.

Milk Cans. Four hundred and eight new milk cans were bought and 23 cans were condemned as insanitary and unfit for milk delivery.

Payment for Milk by Test. The four cheese instructors did the testing each month at most of the factories, while at the factories where the testing was done by the cheesemakers, the tests were checked up regularly; and by exercising careful supervision of the work, errors were reduced to the minimum. Many producers who in the beginning of the season were opposed to enforcing the Act are now its strongest supporters. It is true that weather conditions were favourable, but it may be truly said that the quality of milk from a sanitary standpoint was very much improved the past year. The co-operative support of those in charge of the factories in taking care of the composite milk samples, and assisting in every way to have the details of the work carried out in accordance with the regulations, was a big factor in the successful operation of the Act. The dairy instructors deserve a great deal of credit in this connection. They did everything in their power to see that all the work was done correctly, that the samples were properly taken and cared for and tested at regular intervals. The work was so arranged that no serious objection was raised to the time when the tests were made, as these were completed so far as possible within eight to ten days before or after the end of the month, thus allowing the checks to be issued at the usual period without delay. In a number of cases where milk producers expressed dissatisfaction with the test, the farms were visited, the instructors took samples of not only the herd milk but in many cases of the individual cows as well, and when these were tested in the presence of the owner, invariably the check tests answered the complaint and settled the argument.

It may be stated frankly that the administration of the Dairy Standards Act was not all plain sailing, but on the whole the Act has worked out very well. Some makers who are quite competent to make the cheese may show lack of ability when attempting to do the testing without assistance. There are some points in connection with the regulations under the Act that have not perhaps been enforced rigidly, but next season the line may be drawn reasonably closer.

Annual and District Meetings. Seventy-eight annual and district meetings were attended by the instructors, butter graders and myself during the past year. These meetings are valuable as a means of bringing before the producers questions of importance for their consideration and have an educational value far greater than may appear upon the surface.

Expenditure for Improvements. Three new factories built at a cost of $18,500 and $16,110 is the estimated expenditure on factory improvements.

Creamery Report.

The three creamery instructors were at all times in close touch with the grading station and were therefore in a position to give attention to creameries requiring immediate assistance when the grade of the butter was found to score lower than usual. The instructors visited the grading station regularly, examined the butter from the different creameries and were thus enabled to make improvements where most needed. With the large number of creameries in each group, it was impossible to visit all the creameries as often as desirable. The butter graders gave assistance among the creameries whenever time would permit.

Creameries. One hundred and fifty-five creameries were given 397 full day visits and 166 call visits by the three creamery instructors.

Quality of Butter. Favourable weather conditions tended to improve the general quality of butter, as the cream reached the creameries in better condition than last season and a lot of good, well-keeping butter was turned out by our best creameries. The percentage of yeasty, sour, over-ripe cream delivered was less than last year, and if the intense competition for raw material could be adjusted, immediate good would result, as the general methods and facilities for handling the cream at the creameries is each year becoming more efficient.

Quantity of Butter. Western Ontario creameries manufactured in 1921 32,573,336 pounds of butter. Adding 756,445 pounds of butter made at the combined cheese factories gives a total of 33,329,781 pounds. This is an increase over 1920 of 2,884,025 pounds. Estimated increase for 1922, 11 per cent.

Patrons. Fifty-five thousand nine hundred and eighty-two producers supplied cream to the creameries; the average estimated per cent. fat in the cream was 29.26 per cent.

Moisture Test Scales. One hundred and eleven creameries have moisture test scales; the average moisture content of 806 samples of butter was 15.22 per cent.; 101 samples taken from 50 creameries contained over 16 per cent. moisture.

Salt. The average salt used and retained in the butter as indicated by 671 salt tests made was 4.65 per cent. and 2.86 per cent. respectively.

Coil Vats. One hundred and twenty-three creameries now have coil vats compared with 110 in 1921.

Mechanical Refrigeration. Forty-nine creameries have mechanical refrigeration. The average temperature of the mechanical storages was 31 degrees, and of the ice storages 48.3 degrees.

Loss of Fat in Buttermilk. Four hundred and six buttermilk tests were made; the average loss shown by the usual method of testing was .293 per cent. and by the alcohol method, 69 per cent.

Cream Testing. Ninety-nine creameries made daily tests; 27 creameries tested every two weeks and only 12 creameries now test monthly.

Pasteurizing Cream. Seventy-six creameries pasteurized all the cream; 15 pasteurized part of the cream, a total of 91 as compared with 79 in 1921. Sixty-five creameries heated the cream to 170 degrees for ten minutes; one heated to 185 degrees, 13 to 160 degrees, and 9 to 150 degrees.

Neutralizing the Cream. Sixty-eight creameries neutralized (reduced the acidity of) sour cream before pasteurizing; 41 used milk of magnesia lime; 10 ordinary or hydrate of lime; 5 caustic soda; 11 Wyandotte; 2 bicarbonate of soda.

Grade Cream. Eight creameries paid for cream by grade and 15 creameries graded the cream for the churn as compared with 3 and 9 respectively in 1921.

Equipment and Sanitation. One hundred and nineteen creameries reported with first-class equipment and kept in excellent sanitary condition. Some others are equipped with out-of-date machinery, while a few are not kept at all times in as good condition as the standard requires. I regret to say that it became necessary to take legal action against the proprietor of one creamery on this point, when a fine was imposed. Six others would have been dealt with in a similar way had they not complied with the regulations after fair warning. Every means is employed to get results, and legal proceedings are the last resort, but the time has gone by when dairy plant owners may expect to operate under insanitary conditions for any length of time. It is unfair to the public and to the dairy industry.

Yeasts and Molds in Butter. The Bacteriological Department of the Ontario Agricultural College continued to examine samples of butter each week received from the grading station; valuable information as regards the efficiency of plant sanitation after pasteurization was obtained. Defects in manufacturing methods were detected which otherwise might pass unnoticed. A close observation of this work for three years has convinced me that low yeast and mold counts usually mean clean, sanitary equipment and efficient general work. I wish to express appreciation of the work of the Bacteriological Laboratory in this connection.

Molds. Although there was less difficulty with molds this past year there was still considerable loss on this point. Again it is pointed out that the liners, wrappers and containers must be sterilized to eliminate this defect.

Cream Grading. There is no question but that a large number of our creameries are making a strong effort to improve the quality of the butter by better technical methods, more up-to-date equipment, the selection of cream for the churn, and, as already mentioned, the grading of cream. During the past season a lot of good merchantable butter was produced that went into local consumption, and into the export trade, without complaint as to quality, and the majority of our best creamerymen are turning out large quantities of uniform quality butter which is meeting the demand for their market and is giving satisfaction, but the chief factor that may be expected to further improvement in quality is the payment for cream on a quality basis. Paying for cream by grade should create the necessary incentive to produce No. 1 cream. This has already been proven by a few creameries. The market for No. 1 butter is unlimited, but for No. 2 butter it is uncertain, and for the establishing of an export trade is impossible, not only from an economic standpoint but also from that of a national reputation for fine butter. This important problem should again be given careful consideration, and some concerted action should be taken so that this vital question of quality improvement may be finally settled.

During the past fifteen years a great deal of educational work has been done by the dairy and other branches of the Department of Agriculture, through

dairy schools, dairy instruction, dairy meetings and conventions, the distribution of dairy literature, butter grading, the press, legislation, and in many other ways, all of which have been important factors in assisting to improve the quality of our dairy products. The commendable work has to some extent been handicapped by the lack of recognition of quality payment not only for the cream but for the butter as well.

Further steps in any campaign among the creameries for better cream must be backed up by the co-operation of the producers and creamerymen in support of fair and honest payment for properly graded cream if we are to reap the full benefit expected from the various activities that may be attempted. There must be the incentive of extra pay for first-grade cream and butter and it is believed that such a method of payment is now in sight.

Checking Milk and Cream Tests under the Cream and Milk Purchase Act, 1922.

Three inspectors were employed for this work. Milk and cream tests were checked regularly at 155 creameries, 270 cream-buying stations, all the milk condensers, powdered milk factories, cheese and milk plants, while the cheese factory and creamery instructors and grading station assistants checked a number of tests at these points.

A large number of individual complaints regarding the test from producers in different sections of Western Ontario were also investigated.

It is a pleasure to report that the testing of milk and cream is being done generally along uniform lines and correct methods. I regret, however, to state that legal proceedings had to be taken against several factory operators for non-compliance with the Act or Regulations.

Most of the 9 and 18 gram weights used in connection with the cream test scales have now been replaced by stamped, correct weights. Exchanges were made by the inspectors when the weights were found either unstamped or incorrect. The cream test scales are being kept in much better condition, although some operators do not yet appear to realize the importance of careful treatment of these delicate balances. Immediate repairs were made or new scales ordered when found inaccurate. By constant, persistent efforts on the part of the inspectors and with the co-operation of the factory operators the testing of milk and cream is being put on an accurate uniform basis.

Opposition to this Act has practically disappeared, and many technical details which have entered into the difficulties of enforcing the Act are now cleared up, and I believe the majority of factory men find the Act a protection for them as well as for the producers, especially where unfair competition has existed.

Efforts have been made to administer the Act along reasonable lines, to give instruction in correct methods of testing where necessary, and to allow reasonable lenience in connection with unintentional errors.

On the other hand, where it was found after a fair warning and where all circumstances when investigated pointed to a deliberate infringement of the Act, prompt action was taken. The operation of this Act is believed to be producing excellent results.

Miss Helen G. Campbell, of the Dairy and Cold Storage Division of The Dominion Department of Agriculture, outlined the methods employed in placing before the public food value and health giving qualities of milk and its products. Those interested should write to the Publications Branch, Department of Agriculture, Ottawa.

MARKETS FOR CANADIAN DAIRY PRODUCTS.

J. A. Ruddick, Dairy and Cold Storage Commissioner, Ottawa.

I remember some ten or twelve years ago addressing a dairy convention in the eastern part of this Province on a subject somewhat similar to that which I have to deal with on this occasion. After I had finished, one man came up to me and said, "Why don't you give us something we are interested in, when you talk at these conventions?" I was under the impression that I had prepared a fairly good review of the dairy situation, from an international standpoint, and that it was something the people all ought to be thinking about; but I found at that time it was very hard to get any interest in it, and that they were inclined to cause those preparing the programmes to suggest that some other topic should be discussed. Well, for the past ten years I have persisted in dealing with this subject in some form or other at these conventions, and am glad to find that the marketing end of the dairy industry is attracting very much more attention than at one time. I think that is a healthy sign, and a sign that producers and others are thinking more about their business and looking a little farther than the point at which they dump their milk into the wagon at the factory. It has been the practice for interest in the product on the part of the producer to cease at that point, but it should not be so, and I am glad to find it is not so to-day.

Those interested in marketing problems will be furnished with literature bearing upon the subject by writing to the Dairy Division, Department of Agriculture, Ottawa.

Prof. W. T. Jackman, Professor of Rural Economics, University of Toronto, gave an address on "Transportation as a Market Factor."

He was followed by Prof. A. Leitch, O.A.C., Guelph, who pointed out the great handicap under which farmers are placed by the prevailing rates and regulations for shipping live stock.

THE IMPORTANCE OF MARKETING ORGANIZATIONS FOR CANADIAN FARMERS.

J. B. Reynolds, B.A., President Ontario Agricultural College, Guelph.

In December, I had the privilege of attending a conference on co-operative marketing at Washington. Mr. Carl Williams, Vice-Chairman of the Conference, remarked at the close of the final session that the conference had been the most important gathering ever held in the United States in the interests of Agriculture. Among the impressive features of that impressive gathering these stood out prominently:

The agricultural co-operative movement was proclaimed, and generally accepted, as a movement in the public interest and not only in the farmers' interest.

As a consequence of this general opinion, industrial, governmental and financial interests were represented at the conference by spokesmen who are prominent figures in American affairs.

These spokesmen approved and endorsed the co-operative movement with complete unanimity.

Agriculture, in a nation that has become so largely industrial as the United States has become, was announced still to be the basic industry of that country.

And Agriculture in the United States was admitted, by farmers and financiers alike, to be in desperate straits, and requiring desperate remedies to restore it into its rightful place in the economic welfare of the people.

And lastly, co-operative organizations for marketing purposes were seen to be the best, if not the only, remedy for the present agricultural depression.

Following are a few of the observations made by speakers at the conference, by such men as Judge Bingham, proprietor of the Louisville *Courier-Journal* and chairman of the conference; Herbert Hoover; Eugene Meyer, President of the War Finance Corporation; Mr. Allen, President of the Bankers' Association; and Senator Capper, one of the prime movers in the agricultural block:

"The purchasing power of farm produce in 1922 is 70 per cent. of that in 1913."

"The nation cannot afford to pay less for its food than it costs to produce it."

"The farmer has suffered more than any other class. He has a right to complain. He has a right to demand relief."

"Unless we are going to continue breaking the speed limit toward the doom reached by Babylon and Rome through the impoverishing of agriculture, something must be done."

"We have come to the end of the period of exploitation when the farmer may look for his profits to the increase in the value of his land; but that profit must come, if it comes at all, from sound methods of production and marketing."

As between Canada and the United States, conditions are astonishingly similar. There is more identity than there is difference in our products, and in our marketing problems. The rural people in both countries are alike in their character, their ways of living, and their methods of working. And there is agricultural depression in both countries due in both instances to the rapid deflation in the prices of agricultural products in 1920, accompanied by the continued inflation of the prices of most, if not of all, other commodities and services.

The remedy that is believed to be effectual in the United States should be effectual in Canada.

Canadian farmers need marketing organizations because individual marketing is obsolete as a method of marketing and inefficient.

There is to-day outside of Agriculture scarcely a commodity and scarcely a material service, the price of which is not subject to collective bargaining or collective control. Labour is organized, and any man may, if he will, sell his labour through an organization. Small factories have been organized into large factories, not only to economize in the cost of production, but to enjoy the advantages of the large organization for purposes of marketing. The railroads have been combined and merged until we have in Canada one great privately-owned railway corporation, and one great publicly-owned system. Even this degree of amalgamation is not considered sufficient, and if you wish to gain any concessions in reduced passenger rates for excursions, you must address, not these great systems separately, but the Canadian Passenger Association, representing all the railways. Barbers, teachers, domestic servants, factory hands, doctors, lawyers, have their associations and their minimum wage scales. Minimum Wage Boards are a public recognition of the right to collective bargaining. Retailers' Associations handling various commodities are examples of the same tendency.

This universal movement toward marketing organizations is only a response to changing market conditions. Rapid communication of marketing news, world-wide transportation, the influence of advertising, the widening of human desires, and the raising of standards of living, have conspired to make almost every commodity a world-commodity. More and more the influence of the world demand is superseding the influence of the local demand. More and more world-market conditions are controlling prices. Not long ago the Canadian farmer took his grist of wheat to the flour mill, and brought back the flour and the bran and the shorts made from his own wheat, to furnish bread for his household and feed for his live-stock. The miller took pay for his services in kind. To-day the farmer sells his wheat and buys his flour at prices fixed by world conditions. Not long ago the Canadian farmer sold his hogs and his fat cattle to the local butcher or dealer. And the kind of pork and beef produced had regard chiefly to local demands. To-day the hogs and the cattle go to the great packing houses and in the type of production we are advised to consider the tastes of consumers beyond the seas.

This information regarding world markets—the demands and the prices that prevail outside of local conditions—and the ability to produce those commodities which satisfy the world markets, are quite beyond the capacity of the individual farmer to gain or to take advantage of.

What are the legitimate objects of co-operative marketing associations among farmers? By legitimate, I mean those objects which gain for their members their just dues, and which therefore have regard to the public interest as well as the interests of the class served. For no class can continue to suffer injustice or disabilities in marketing its commodities without harm to the public. Especially is this true of the farming class, because of the numerical and economic importance of the farmers.

The objects are not to fix prices or to profiteer by holding farm products merely for a rise in price. The objects are to find the consumer, to furnish food products that the consumer will buy, and to secure a just share of the price which the consumer pays.

The general regulator of price is the relation between supply and demand, but the law of supply and demand is not a law of the Medes and Persians. Its operation can be controlled by perfectly legitimate means, in the interests both of producers and consumers. The demand may be legitimately increased by improving the product, or the demand may be increased by advertising, or it may be increased, in total, by marketing the product over a larger period. Hence a marketing Association may have some control over demand by securing a uniformly better product, or a product more attractively put up. There is more butter eaten to-day in Ontario per capita than there was thirty years ago, because the butter is uniformly better. There are fewer apples eaten to-day in Ontario per capita than thirty years ago, because, outside of the commercial apple-growing districts, which export most of their apples, few good apples are to be had.

And it is possible to extend the period of consumption of semi-perishable foods, such as butter, eggs, and fruit, by holding the surplus products in suitable storage and carrying them over from the period of peak production and distributing them as evenly as possible over the year. In a measure, this is already done, but it is not done sufficiently by the farmers or in the farmers' interest.

Supply can be controlled by limiting production. I have heard farmers talk about limiting production, but I have never known a farmer, unless he

was a lazy one, to withhold his hand from sowing the seed when the season and the opportunity were kindly.

But there are two factors in supply which are controllable, and which should be controlled in the interests of producer and consumer. These factors are, the *time*, and the *place*, of marketing. The farmer is usually in the position of needing the proceeds of his labour as soon as the products can be conveniently marketed. If the majority of the farmers producing a commodity are in this position, it follows that their produce is "dumped" on the market at the end of the period of production, instead of being marketed in an orderly fashion, just as fast as the market can absorb it. The result is, either that some of it is wasted, or someone buys it at the dumping price, stores it, and proceeds to market it with due regard to the absorbing power of the market. The buyer is generally rewarded for his business sagacity by profiting to the extent of a wide spread in prices.

As to place of marketing, obviously the logical place is at the point of consumption rather than at the point of production. There may be a heavy surplus at the point of production, and a short supply at the distant point of consumption, or there may be a glut at one point of consumption and a shortage at another. The individual farmer scarcely can gain all necessary market information, nor has he command of shipping facilities sufficiently to direct his produce where it is most needed.

An illustration of lack of quality, lack of uniformity and dumping, all the results of individual marketing, is given in a report from the Christmas poultry market in a large Ontario centre:

"Our Christmas poultry fair was a lesson for any economist. Purely a case of dumping, and the inferior product either sacrificed or taken home. Every conceivable method of killing was in evidence, beheaded birds, broken-necked birds, ghastly exterior slashes behind the head, and a few properly killed. Despite the fact that feed is cheap, birds in poor condition were offered."

Another illustration is found in the report of the Deputy Minister of Agriculture for Canada on market conditions in Britain:

"One most striking peculiarity in favour of many of the products from our competitors was the uniformity in appearance and quality as contrasted with the great lack of uniformity in appearance and quality in our Canadian products, this applying more particularly, of course, to bacon, cheese and butter."

The products that are driving Canadian products off the British market are graded, packed, shipped and sold by marketing associations in competing countries, particularly Denmark and New Zealand.

It is reported that the British Columbia fruit-growers are about to form a central marketing association to control the distribution and sale of at least ninety per cent. of the fruit grown in British Columbia. It is stated that the British Columbia growers, having had two seasons of low prices, should be just about in the frame of mind to give better support to co-operative movement than they have ever done up to the present time.

Stories are coming to hand of every farm along several miles of road in an Ontario county being for sale. Is the present state of discouragement among Ontario farmers sufficient to drive them into co-operative enterprise, or must a still harder necessity oppress them before they will be induced to adopt modern business methods in marketing their produce?

At the evening session, held in connection with a banquet in the College dining hall, PRESIDENT REYNOLDS outlined the services which the College is prepared to give to the farmers of the province.

L. KLINCK, a graduate of the O.A.C., and President of the University of British Columbia, spoke of the benefit accruing from an interchange of information, views and ideals on the part of those engaged in similar work from all parts of the Dominion.

LOOKING BACKWARD.

PROFESSOR DEAN said in part as follows:—

The dairy business may be divided into three great classes: First, the producers of milk on the farm; second, the manufacturers; and third, the marketing of milk and its products; and what I shall have to say will cluster around these three thoughts. The striking thing in looking backward over progress made on the dairy farm, is the fact that we have now 62 cows reported with official or semi-official records of over a thousand pounds fat in one year, and most of them have records of over 30,000 pounds of milk in a year. That, it seems to me, is one of the most striking developments, so far as it relates to the dairy farmer, the wonderful development in the dairy cow.

The second part, as applied to the producer of milk, is the wonderful development and improvement in the feeding of cows, the building of silos and growing of green feed and the feeding of green, succulent feed to cows practically all the year round. There was a time not long ago when silos were practically unheard of on the farms of this country. The growth of green crops and feeding of green crops preserved in silos has had a wonderful influence on the development of our winter dairy business. We can scarcely realize what that has meant to our great dairy industry, the fact that we are able to get a large supply of milk, not only in summer, but also in winter. I can remember in the days of the dairy school, when we first began, we had to send fifteen, twenty, thirty, forty and fifty miles from Guelph in order to get a supply of milk and cream for our dairy school. Now that is all done away with, and we get a full supply of milk and cream close by during the whole winter term.

A third fact which stands out prominently in dairy farming is the wonderful development in application of science to the separation of milk. The evolution of the cream separator to my mind is one of the most striking things in the whole dairy business. When you think of the fact that the farmer or his wife can take the milk and immediately after it is drawn from the cow can run it through a machine and get the cream, and take it to the creamery, get the money and spend it before dinner, it is a wonderful development. All that is in practice every day on the dairy farms of this country.

And then the milking machine: There are some who say the milking machine is not a practicable machine. I believe it is the solution of the development of dairying on a large scale on the farms of this country. It is impossible at the present time to get the right kind of help to milk large herds of cows by hand, and that means the milking machine must come into its own, and the dairy farmer who has the machine and the cream separator, has certainly wonderful aids in the development of the dairy farm and the dairy cow, which as I state to my classes frequently, is the foundation of the dairy business.

Then there has been recently developed in connection with the cows a system of testing, known as "record of merit," "record of performance," "cow testing association," and more recently, development of "accredited herds." These are wonderful aids to the dairy farmer and will do wonders for the men producing milk on our farms.

Coming to the second part of my subject, the manufacture of milk: The striking thing is the application of the principle of pasteurization as applied to milk, cream and the products of the dairy. I think probably there are no men here now who were in the dairy school or class of '96. If so, they will remember during the winter of 1896 you pasteurized all the cream in shotgun cans. So far as I know, that was the first practical application of anything like a commercial scale of the principle of pasteurization in the manufacture of butter in Canada. At that time (can you believe it?) there was not a pasteurizer, a modern machine, manufactured anywhere in Canada or the United States. Now we have these machines made by our own manufacturers, wonderful machines, and these have done a great deal for the butter makers of this country. Yet, I regret to say, there are a large number who do not follow the system of pasteurization which gave them the wonderful lead they have in the manufacture of fine creamery butter; and I do not think we shall ever be able to compete with the Danes or Australians or New Zealanders until we adopt pasteurization and manufacture practically sweet cream butter. I have sometimes thought lately that too many of our dairymen have what I would call the "devil's degree" in dairying. The initials of the devil's degree in dairying are "D. A."—dirt and acid—and ninety-five per cent. of the troubles of dairymen and producers of milk are caused by people holding this degree. When you have overcome this tendency for people to hold this degree, you will have overcome one of the chief difficulties in the line of manufacturing in this country. How are you going to bring that about? That is the big problem. It cannot be brought about in any other way than by education, until the people understand what it means when milk is contaminated by dirt, when you have utensils contaminated by dirt, and you allow the acid to develop. I think it was Mr. Scott this morning called attention to this point, and when you allow your cream to get over-ripe, you have started the rotting process. Just as soon as the cream begins to sour the rotting process starts, and if you let it go too far, no matter what you do, you may pasteurize and neutralize and all the rest of it, your product is spoiled; and until we get that principle thoroughly ingrained in the butter and cheese manufacturers and farmers producing milk and cream for butter and cheese manufacture, we shall not make very much progress in this dairy business. I feel strongly on that point. I feel it is the cause of much of our troubles in making a fine quality of butter and cheese. It is an old story, told over and over again at our dairy conventions and everywhere, and yet it seems it cannot be repeated too often, because we see evidences of the bad effects of dirt, especially in milk and cream.

The third branch of my topic will perhaps not be so popular. This question of markets and marketing is a very, very difficult problem. I think, however, I am safe in saying that during the past twenty-five years we have seen the rise and fall of the cheese board or cheese market. Those of you who read the signs of the times cannot help but be struck by that fact. Something must take its place. The difficulty is to know what that something is, and until we solve that problem we shall have a very difficult question indeed to handle, but the question will be solved somehow in the very near future. If our farmers who are dissatisfied with the present system believe that they can work out a better system, then I think it is due them by the other fellows to let them see what they can do; and if they can evolve a better plan of marketing our dairy products than we know at the present time, I think they should be given every opportunity to try it. It can only be determined by experience.

Now as to the glimpses into the future. I believe the time will come when our dairy farmers will receive higher rewards for the labour they expend upon

their farms and cows, and will not have to work such long hours as seems necessary at present. I have been spending my holidays on a dairy farm for the last ten or twelve years, and I have found that getting up at five and working until eight o'clock at night is anything but fun, and I come in at night very, very tired indeed. And no wonder so many of our farmers feel they cannot continue that strenuous life on the farm. We must solve that problem. There must be some way by which our dairy farmers will be able to make returns on the capital invested and pay for the labour they put on their farms and their cows and have more time for leisure than seems possible under present conditions.

One thing which struck me particularly, in a visit I paid a few years ago to the famous Island of Jersey, was this: that the Jersey farmer does not work so hard as the Ontario farmer. He imported—or did at that time—much of his labour from Brittany and France, while he superintended the work on the farm. He used his head, and did not work very hard with his hands, generally speaking, and I believe something of that kind will be necessary in this country. We possibly shall never be able to have the cheap labour found on many European farms, but we do have something that takes its place, this is good machinery; and the development of machinery on our farms and in our factories will help overcome this drawback of extremely long hours and hard labour necessary in the dairy business. And that leads me to say something which I spoke of at the Creamerymen's banquet last month in Toronto. I believe there is great need to-day for what I call dairy engineers, men who have made a special study of machines, the application of steam power and electric power in operation of milking machines, cream separators, churns, pasteurizers and the hundred and one machines now operated in connection with our dairy business, and I hope the time will come when in our dairy department we shall be able to give a course in what I would call dairy engineering—men who are specialists in the application of machinery in the solving of the problems in connection with the dairy business. I hope the time will come in our department and dairy school when we will be able to give advanced courses, not only on the line of dairy engineering, but in condensed and powdered milk, ice cream manufacture, etc. These are some of the things I have in mind in our new dairy building, if we can get the support and necessary funds to carry on.

ADDRESS.

W. Bert Roadhouse, Deputy Minister of Agriculture, Toronto.

Since I have been here this afternoon, I have been in more or less an atmosphere of economic thought and economic discussion, with the result that my mind seems to refuse to run along any other lines. We have been going through for the past few years that period which people tell us is the reconstruction period, the period necessary from the disruptions of war to the more settled conditions of business. We have just closed another year of that period, and what are the outstanding conclusions—outstanding evidences of that year's experience in agriculture, and to what conclusions do they point? May I say that in the year just closed the agriculture of Canada showed a surplus of $50,000,000 over the year previous, notwithstanding the drawbacks of low prices and the disproportionate relation of agricultural values to other values? That indicates a certain measure of progress, and financial men tell us that while the

farmers of this country are not in a position and have not been attempting to enlarge their purchases, they have to a very considerable extent been meeting their obligations, and in some degree overtaking them, and that in itself is regarded as a very creditable and encouraging sign. I have spoken of the value of field crops. What of our live stock products? We find, as you are aware, the dairy industry has stood up perhaps better than any other branch, and in that connection I would like to mention this significant fact, that the prices of dairy products at the present time still show a percentage of forty over the prices of 1913, in the pre-war period, whereas the prices of feed stuffs which go into the production of these products are on a level with the 1913 period. That one point, which I quite recognize, is only a fraction in consideration of your problem, is in some degree an illustration of the buoyancy of the industry in which you are engaged. Closely allied is the swine industry, and there again we find an advance of twenty-four per cent. over 1913, and level with 1913 in feeding stuffs. These are facts on which we may base the soundness and stability of this particular branch.

When we look, however, to other branches of live stock, we find there has been an exceeding liquidation in beef cattle, and to some extent in sheep, because the price of these commodities has gone away down in the scale, and the result has been that it has been unprofitable to carry them, and they have been rushed to market; but coming to the end of the year, we find this liquidation has already had its effect, that there is now evidence of steadying prices, the law of supply and demand is about to enforce itself once more, and we may expect a steadying condition in that branch of the industry as well as any other. We are still being confronted by this great disparity between agricultural and other values, and can only as reasonable men come to one of two conclusions: It is impossible to think that these values can continue in the disproportion shown in the past, and either other values must come down or agricultural values must go up. On the horizon I see few signs of other values—labour, for instance, and transportation—only slowly coming down, and that forces us to the one other alternative, to expect a continuous steadying and perhaps increase in the value of agricultural products, in order to bring the various industries in this country back to that level on which they must be before the proper degree of progress can be expected and worked out; and so I think that is the prospect to which we must look forward. It seems to me the worst is behind, and that there are brighter and better times ahead; and so, while I would not present to you a picture of gloom, I would like to present another picture, a picture of that lonely figure, the man behind the plow. Lonely, did I say? In literature, in art, in poetry, the farmer is invariably pictured as a lonely figure; but it seems to me, in this day when he comes together in organizations such as this, and plans in groups for social and other purposes, he has cast aside that element of loneliness in which he has been enshrouded throughout the years. But be that as it may, that is the figure I would hold up before you to-night. On his back there is carried the burdens of reconstruction, wearily yet cheerily, slowly but steadily, he is bearing that burden across the trying stages between that era of dissolution and despair, that era of priceless heroism and unspeakable selfishness which we remember as the war, back to the time of progress to which we are looking forward. And as he carries that burden, he exemplifies those old-fashioned virtues, intelligence, industry and thrift, without which no real progress can be made and which must be applied to all our walks of life as they have in recent years to agricultural development, the agricultural phase of our activities, if the journey is to be completed by the country as a whole. And

so I present that figure as one that stands out in our current economic history as one to which we must give credit for the example of these efforts which alone can save us as a nation at this time; and I say to you, let us appreciate him, let us encourage him, let us help him in every way we can.

THE RELATION OF CREAM GRADING TO THE IMPROVEMENT IN QUALITY OF ONTARIO BUTTER

F. A. Keyes, Elmira.

In the time allotted to me I will try to give a few conditions of the creamery industry in Western Ontario as I saw it during this past summer, when I visited a number of creameries in Western Ontario and saw much Western Ontario butter.

I was somewhat surprised when I picked up the press last night and saw the report of our butter grader, Mr. John Scott; for according to his report it is worse this year than ever. We have more second-grade butter than the previous year, and when we take into consideration climatic conditions, comparing the two years, 1921 with 1922, I think we are worse than these figures show, because in 1921 we had unfavourable conditions such as I never saw before in my eighteen years' experience, and this year was an ideal year.

He also stated in his report that there were three creameries which have done really good work. If these three creameries, which he states are in Western Ontario, can do that good work, why cannot we all?

We have been talking about cream grading for two or three years at least, probably longer, and at the Creamerymen's Convention in Toronto in December we did not come to any conclusion, and are no nearer, as far as I can see, to cream grading than when we started out, unless it is through individual creameries. A few started last summer, our creamery among others, and we found it successful. We had a big improvement in the quality of butter, which of course meant we had a big improvement in the quality of cream. That necessarily had to come first. Now I stated at Toronto we were not ready for cream grading. I cannot see how a goodly number of creameries in Western Ontario are going to grade cream under the conditions they are getting their material. The fault does not rest with the farmer; if you go to the farmer and show him his cream is not in the condition you want it in, and talk to him intelligently and show him you will increase the price paid to him if he improves the quality of his cream, he will come across every time.

We lost a few patrons, but we were glad the other fellow got them. I do not want the kind of stuff they furnish.

How are you going to get good cream when you go away out miles and miles—fifty and sixty to a hundred miles? A man goes out with his truck from the buying station and drives fifteen or twenty miles and farther, gathers that cream once a week, through the hot weather, and takes it home to the town where he lives. He does the testing there that evening. That cream has to be shipped the next morning, anywhere from 25 to 40 miles by train; then it is unloaded from the train, taken another 25 or 30 miles across country on a truck. What is the use of talking about grading such cream? Who is to blame if that cream is not in the condition it should be before it comes to

the creamery? Is it the farmer or the creameryman? I say it is the creameryman, and I say it without any fear of successful contradiction?

I followed the butter that came from a number of these creameries to the Provincial grading station, which is open to the public. I made it my business to visit the station frequently this summer to see the butter being sent in and compare it with our own. That is the only way you can find out what kind of butter you are making—get it alongside somebody else's. Then you can find out your own standing and see both your own and the other fellow's defects and benefit by it. I saw quite a number of re-scores of that butter and also saw a good deal of butter after it had been in storage. The butter was just exactly as you might expect from the quality of cream that it was made out of. Now in our own case, we have no buying stations at all. We do not want them. We would not have them. I have turned them down.

Now there are a number of creamerymen in the business to-day who, it seems to me, went out for quantity regardless of quality. They were bound to have the turnover; it did not make any difference where they got it, or what condition it was in, but they would have the quantity. There are some men in the business to-day who surprise me very much by the quality of stuff that they are turning out, when I look at the privileges these men had, and what I considered they knew of the creamery business a number of years ago. But they seem to have that object in view, quantity regardless of quality. I just reversed it. That was my idea when I started out. I have kept that, and am more convinced than ever that that is the only way to improve the quality of butter in Ontario.

The farmer is suffering because of the conditions I have outlined. We are loaded down with No. 2 and No. 3 butter. There is lots of that stuff to be bought, but it is not the kind of butter that the trade wants; and it is forced on the market at a lower price, and those creameries making the good butter find that they have to take less money than otherwise because the market is loaded down with this No. 2 stuff.

PROF. H. H. DEAN: How many grades did you make, Mr. Keyes?

MR. KEYES: Just two.

Q.—What differential in price? A.—Three cents a pound fat.

Q.—Who did the grading? A.—The man who did the sampling; I helped him out at the start.

Q.—What standards did you have? A.—The standard for No. 1 was a nice, clean flavoured cream, not necessarily sweet. That was not a very high standard at all. Acidity was not taken into consideration except when the cream was foamy; that went into second grade.

MY EXPERIENCE IN CREAM GRADING IN 1922

R. A. STRATTON, MANAGER GUELPH CREAMERY CO.

In reporting our experience in cream grading for 1922, may I first be permitted to review a few of the steps leading up to cream grading at Guelph Creamery.

For years we have been convinced that little or no improvement would or could be made in the quality of our butter, unless the producers supplying the good cream received some encouragement or compensation for producing

good cream, and the careless or indifferent patron was penalized or made to feel that it did not pay to supply cream of poor quality.

In 1920 we adopted the individual can delivery, in preparation for cream grading, and have been living in hopes that the Ontario Government would enact legislation making cream grading compulsory.

After the question of grading had been discussed at the Creamerymen's Convention from all angles for some time, a committee composed of Wm. Newman, F. Herns, Mack Robertson, W. G. Jackson, H. S. Johnson, R. M. Player, M. J. Lewis and J. A. McFeeters were asked to draft a recommendation during luncheon and report back to the meeting.

This committee were unable to agree on the regulations to be asked for. This was a surprise to me, as no doubt it was to many others present. The difficulty appeared to be that, to give enough elasticity to the regulations to suit all, there was nothing left that any magistrate could work upon.

The discussion was continued for some time, but no one present could suggest a remedy. However, before parting, it was almost unanimously agreed by the creamerymen present (with one exception) that they would grade cream voluntarily in their creameries during 1922.

I believe the proper procedure is for each creamery to honestly adopt grading on its own responsibility, because we have so far to go before all the cream we receive would grade No. 1 if graded according to ideal conditions, that it is better to go slow but sure, until our cream supply is better than at present.

We circularized our patrons about April 1st to the effect that we would commence grading on May 1st. We did so, but did not make the differential in price until all the routes were collecting twice per week, since which time any patrons sending cream that graded No. 2, have been paid 3 cents less per pound fat.

It is really surprising how little complaint we have had from those whose cream has graded No. 2. We have lost some patronage, but if a patron will not improve, the other fellow is welcome to all our No. 2 cream producers.

It is true that we have not set as rigid a standard as we would like to do, and that time will demand, but we have made a start, and would not think of discontinuing grading, no matter what other creameries may do. Our opinion is that necessity will compel creameries to adopt grading if they have any regard for the reputation of their brand of butter.

Our buttermaker can, by culling out from 5 to 10% of the cream, make No. 1 butter from the balance, but he could make better butter if "All was as good as the best." We send back a statement with each lot of cream delivered, so that the patron does not require to wait until pay day or the end of the pay period before he knows what his cream is grading and before he knows whether he is going to get No. 1 or No. 2. I have not heard anyone take the stand that there is no necessity for grading, but as to just the regulations to adopt we cannot agree on.

Q.—You did not get any differential in the price you received for the butter? A.—We have been grading for some years, and when we were putting up solids we always graded and put the best in the solids and the second grade was made into butter for immediate consumption.

Q.—The price of the butter sold was all pooled, and the man who sent second grade cream was penalized for second grade cream? A.—He was, every time.

E. M. JOHNSTON: I cannot agree with Mr. Keyes, altogether, on cream-gathering stations. We get better cream from these stations than from lots

of good individual shippers. We collect it every day and it does not lie around for forty-eight hours. We unload right away and get better cream than from individual shippers, shipped every day.

MR. KEYES: You know, when I went to school I used to study grammar, and there were a lot of rules to learn. Then there were always some exceptions to these rules. I will tell you about some butter that came from the creameries getting their cream from buying stations. I did not intend to do this this afternoon. I have bought some butter that came from buying stations, and cut it up, and I know what it is like. I bought 150 boxes a week ago; part of it was shipped up and I opened half a dozen boxes, and I called the buyer up and said, "It is no use to me." Now I know where that butter came from. I know the creameries, and I know just as much about the butter that came from the creameries who were gathering their cream through buying stations as probably the most of you know. I cannot use it in my trade; my customers will not buy it.

Q.—Maybe you have a little better trade than anybody else? A.—Well, if we have, we had to have the quality butter to get that trade, and we do not get it through cream-gathering from cream-buying stations.

MR. STRATTON: I would back up what Mr. Keyes says about cream-buying stations. We have kept away from them, because we wish to produce quality.

MR. IAN WAY, Wellington Produce Company, Harriston: I have been very interested in the addresses of Mr. Keyes and Mr. Stratton. We started this spring to manufacture butter for the first time, and we decided to go in for quality, not quantity. We avoided buying stations. To overcome that, we bought two International speed wagons, and have covered territory on an average of between seventy and eighty miles a day, gathering in small five-gallon shotgun cans three times a week. Perhaps you say, "Well, anybody can make prize butter with cream of that nature." It is quite true. Up to the present time, since the first of April, we have manufactured pretty close to 160,000 pounds of butter, and out of the cream from which that 160,000 pounds was made, I can safely say we got not more than approximately 600 pounds of cream which would not go No. 1.

RESOLUTIONS

Resolutions were passed as follows:—

Asking the Provincial Government to provide for making moisture tests of all samples of butter sent to the Grading Station during 1923, and that the results of the test be incorporated as part of the score.

Expressing appreciation:

(a) For the hearty response and helpful co-operation of the President of the College and members of the staff in making the Convention a success.

(b) To the Minister of Agriculture, the Honourable M. W. Doherty, for the erection of the new Dairy School building.

(c) To the Dominion and Provincial Departments of Agriculture for the assistance rendered the dairy industry.

(d) To the Windsor Salt Company for the handsome badges provided.

Approving of the Dominion Butter Scoring Contest, and expressing the opinion that a Cheese Scoring Contest of a similar character would be beneficial.

Opposing the manufacture and sale of oleomargarine in Canada.

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